

*With the Author's comments.*

1897.

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# ANNUAL REPORTS

AND

## Vital Statistics.


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*The Rural Districts of*  
BUCKLOW AND NORTHWICH;

AND

*The Urban Districts of*  
KNUTSFORD, MIDDLEWICH, WINSFORD,  
AND BIDDULPH.



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PREPARED BY

T. W. H. GARSTANG, M.A., Oxon.,

M.R.C.S., L.S.A., D.P.H.,

*The Medical Officer of Health of the Districts.*

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In accordance with Instructions from the Local  
Government Board.

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## ERRATA

On pages 17 and 23, in General Tables II. and V., the General Death Rate of Middlewich Urban District should be 15·6 instead of 15·4; and the Knutsford Urban District 16·6 instead of 15·0

In the Northwich Rural District, the Weaverham Sub-District should be 16·4 instead of 16·1; Northwich 19·1 instead of 19·6; and Over 14·4 instead of 14·5.

Page 49. Supplementary Table II. The figures in the column "Total Deaths" must be altered to agree with those given in Supplementary Tables IV. and VI.





## ◁ INTRODUCTORY. ▷

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**T**HE time has again arrived when every Medical Officer of Health is required by the Local Government Board to prepare an Annual Report, which is to be read to his District Council; and copies are to be sent to the County Council and to the Local Government Board for their information as to the position of affairs within the District.

The District Council is the body entrusted with the appointment of the Medical Officer of Health, but one half his salary is paid by the County Council, and he is obliged at all times to obey the instructions of the Local Government Board; which include detailed directions as to the preparation of the Annual Report.

It must always be remembered that a Medical Officer of Health does his work and prepares his Report as the servant of the Local Government Board; and not simply at his own pleasure, or even at the pleasure of the District Council.

Dr. Fox wrote as follows to the Middlewich Urban District Council in 1887:—"It would be a breach of trust on my part not to make so important a document the suitable vehicle for conveying such useful information to the community, as the varying facts of each year might serve to elucidate or enforce."

### TWENTY YEARS' WORK.

The year under review completes a period of twenty years since these Annual Reports began to be made, at all events in these Districts. In Dr. Fox's Report to the Northwich Rural District Council for 1880, and again in his Report to the Middlewich Urban District Council for 1887, it is distinctly stated that



the Reports commenced in 1878, and that there exist no statistics before that date.

I also note that the Report for 1887 is much more elaborate than any of its predecessors, as great importance was attached to a review of the collected facts and figures for a complete period of ten years. Much more therefore am I bound now to undertake the important and weighty duty of devoting a portion of this Report to a careful review of another ten-year period; and of the completed work of twenty years.

I deal with an area but one-half of the old "Combined District," yet I think it will be found large enough to afford many valuable comparisons.

I have within the last few days obtained access to a complete series of Annual Reports, written by my predecessor, from 1878 to 1894 inclusive. I propose to refer to them, as necessary; and will substantiate each quotation by the initials of the Council and date of the Report.

In the various Tables allowance must be made for the following alterations in area and population:—In 1879 the Bucklow Rural District was diminished by the formation of the Wilmslow Urban District; in 1882 the Biddulph Urban District was taken from the Congleton Rural District; and in 1895 the Bucklow Rural District was diminished by the formation of the Ashton-on-Mersey and Knutsford Urban Districts. The Urban District of Middlewich was slightly enlarged in 1892 at the expense of the Rural District of Northwich. Some of the figures for the Township of Knutsford have been obtained from the old Reports to the Bucklow Rural District, but it is often uncertain, in this case, as also in the case of the Knutsford Sub-District of the Bucklow Rural District, whether the inhabitants of the Workhouse and Gaol are included in, or excluded from, the numbers on which the calculations are based. The records for Biddulph also are missing for the years 1882 to 1887 inclusive, probably owing to their not having been printed by the newly formed Local Board; an exercise of economy which they themselves would now be the first to regret.

I now append Tables which it has cost me a great deal of time and trouble to prepare, as the different figures have had to be patiently hunted out from different places, and in some cases calculated for the first time from other figures. I commenced the Tables last year, dealing then with the years 1891 to 1896; I now add 1878 to 1890, and 1897. Each Rural District is given, as far as possible, in its four separate Sub-Districts, each of which contains a number of Townships (as can be seen from the Tables in the different Reports), and which must not be confounded by the Reader with the Urban Districts of the same names.



**Birth Rates.**—These present the usual features. For 1897 Bucklow R. is 23·1; while Northwich R. is 34·3, which is as high as the average of the Urban Districts. During the twenty years the Rates in the Bucklow District have fallen considerably, with the exception of Lymm R. which marks its highest point in 1897; while on the other hand Altrincham R. and Knutsford R. touch their lowest point this year. Middlewich U. is just about the average of the twenty years; and Winsford U. is gradually declining, having only recorded a lower Rate than this year's on the three occasions, 1889, 1890, and 1892, all within the last decade. It is interesting to note, also, that in the Northwich District, Over R. is the only Sub-District which is distinctly declining; all the others are holding their own or gaining.

**General Death Rates.**—These shew a decided improvement in the Urban Districts, over the Rates customary in the earlier years of the period. No permanent improvement can be claimed for the latter years. In the Rural Districts there are no great improvements over the whole Term; and indeed in all Districts the Rates fluctuate in a surprising degree. The determining factors are probably largely climatic and epidemiological, rather than sanitary.

**Zymotic Death Rates.**—Here we might fairly expect to find the effect of improved sanitation, and it is gratifying to see that the figures justify the expectation. Individual years are still apt to be bad; indeed 1897 seems to be one of the worst. But it is instructive to note what diseases have produced this result. In the whole Districts the number of deaths is 159 for 1897, made up of Whooping Cough 53, Diarrhœa 48, Measles 38, (or 139 due to diseases which nobody bothers about), compared with Scarlet Fever 10, Diphtheria 5, Enteric Fever 5, (or twenty due to diseases of which people are frightened); Small-pox, Typhus, Cholera, and Continued or Relapsing Fevers, are conspicuous only by their absence. The bulk of the Zymotic Death Rate then is built up from causes over which Sanitary Authorities have little control.

**Infantile Death Rates.**—The same remarks apply in a great measure here. Many of the children who die from Diarrhœa, Whooping Cough, or Measles, have to be enumerated a second time in calculating Infantile Mortality. The figures in Table IV. are not numbers; they are proportions or Rates to an assumed number of 1000 Births. For example, in the Northwich Sub-District the real figures are (for 1897) Births 303, Deaths of children under one year, 55; from which the proportion is stated as 181 to 1000.

**The Tables.**—These explain themselves. In Table V.

have grouped the years into four periods for comparison, viz.: first period, six years, 1878 to 1883; second period, seven years, 1884 to 1890; third period, six years, 1891 to 1896; fourth period, 1897.

### SUBJECT MATTER.

In my last Annual Reports I repeated in each one certain paragraphs which appeared to be of general application; but this method involves cumbrous repetition; and, assuming that my Reports are allowed to be printed together as before, I think it will be better this year to deal first with all such subjects of general interest and importance, and follow with the separate District Reports, which will then each be correspondingly shortened.

### PRINTING.

I have to thank all my Councils for a small extra expense incurred by each to enable me to present my Reports together. In my opinion, the value is amply repaid by the opportunity afforded for comparison, alike of conditions, of difficulties, of means adopted, and of results achieved in the various Districts.

I shall study economy by being as brief as possible; but there are many important subjects to be considered.

### CLASSIFICATION OF DISEASES.

It might be thought impertinent to criticise the Official Tables A and B. I will therefore content myself with offering the following suggestions, in a spirit of all due respect to the authors. (1) Is it necessary to keep two columns for Diphtheria and Membranous Croup? Many persons, now-a-days, believe them to be identical. (2) Is it necessary to retain a column for "Continued Fever?" Many persons, now-a-days, deny the existence of such a disease. (3) Is "Phthisis" regarded as equivalent to "Phthisis Pulmonalis" only? This is the commonly accepted belief. (See *British Medical Journal*, December 11th, 1897). But if Phthisis Pulmonalis is now known to be merely the outward manifestation of the Tubercle Bacillus in the Lungs, would it not be more scientific to classify together all the diseases produced by the Tubercle Bacillus? The statistics, as worked out at present, appear to be of doubtful value.

But there is another point on which the Medical Officer of Health may certainly claim sympathy in a difficult task. This arises from the varying customs of Medical men in filling up their Certificates of Death. One will write simply "Diarrhœa," another will (with equal accuracy but greater detail) write "Gastro-enteritis" for the same case. Is the latter to be entered in the "Diarrhœa" column or not? No doubt there is variation among Medical Officers of Health themselves on this point,

and until some authoritative pronouncement be made, the correctness of Zymotic Death Rates will be open to doubt.

### PROCEDURE IN THE CLOSING OF PUBLIC ELEMENTARY SCHOOLS.

The Memorandum of the Local Government Board, dated July, 1897, quotes the Code of Regulations made by the Education Committee, of which the well-known Article 88 prescribes that a School may be closed by the "Sanitary Authority," or by "any two Members thereof, acting on the advice of the Medical Officer of Health." As a matter of convenience, each of my Councils has given me authority to act for it, in the intervals between Council Meetings, subject to my action being reported to and confirmed by the Council at its next Meeting. I have received an intimation from the Local Government Board, dated 9th December, 1897, which contains the following words: "A Medical Officer of Health has himself no power to order the closing of an Elementary Public School on account of the prevalence of Infectious Disease, and the District Council cannot invest him with such power. In the intervals between the Meetings of the District Council it is competent for any two Members thereof, acting on his advice as Medical Officer of Health, to give the necessary order for closing." These instructions will, of course, be strictly obeyed for the future; but I must say that I entirely fail to appreciate the importance of the distinction made between the two methods of procedure. The result appears to be precisely the same; but the official mode of arriving at it will entail more trouble on the Members of the Council, who will in future have to make out and sign the closing orders.

### VALUE OF SCHOOL CLOSURE.

Last year I reported (pages 29—30 Annual Report, 1896), my opinion of the great value of School Closure as a protection against Scarlet Fever, mainly based upon observations at Winnington. In the beginning of this year the Barnton Schools were closed by prolonging the Christmas Holidays up to February 22nd. This is the only case during 1897 in which I have had to close a School for Scarlet Fever (and this, of course, was the last remains of the 1896 epidemic). But I have in two instances proved the value of the milder proceeding, known as "exclusion of particular scholars." Thus in the Winsford Urban District when an epidemic seemed to be laying hold of the Village of Meadow Bank, the exclusion, on November 4th, of a boy with a suspicious history, and on November 12th of four girls with sore throats, put an end absolutely to an epidemic of obscure causation, but which obstinately resisted every other

measure, even though these included the removal of several of the earlier cases to Hospital. Again in the Biddulph Urban District, on October 25th, a mysteriously caused and slowly rising epidemic in the Village of Gillow Heath was absolutely stopped by my discovery (on personal investigation) of two children in the peeling stage, (in whom the disease had never been recognised, treated, or notified). On my securing their isolation, no further cases occurred except two more children in the same house. I am, therefore, quite satisfied that School Closure in extreme cases, and exclusion of particular scholars in milder cases, is of the utmost value in arresting epidemics of Scarlet Fever.

But as to Measles the case is different. I have had a large experience during 1897, having closed in the Bucklow Rural District the Schools in three Townships between April and June, and in eight Townships between August and December; in the Northwich Rural District one School in September and October; in the Middlewich Urban District all the Schools in August and September; and in the Knutsford Urban District all the Schools in November and December. I do not believe that these Closures have done any good at all. The reasons are tolerably obvious. (1) Owing to the early stage in which the disease is infectious, the mischief is done before it is known that a remedy is required; (2) Parents attach so little importance to Measles that I have known numerous cases where children with the rash shewing plainly on their faces have been found actually attending Church or School, and isolation is therefore not attempted; (3) Schools in the same way do not as a rule send information of the existence of Measles, until they find their attendance suddenly diminished to a point which threatens to affect their Grant; and this final diminution in attendance often occurs within the space of 24 hours, after odd cases have been absent from School for a week or a fortnight.

The Closure of Schools for Measles is therefore applied for by Managers for financial reasons, and not for public health reasons; and, as I have said above, I believe such Closures to be absolutely ineffective as means of arresting epidemics of Measles.

### THE VALUE OF NOTIFICATION.

I have heard of a District where the receipt of a Notification (this is some time ago) simply meant that (1) the case was entered on a list for statistical purposes; and (2) a leaflet of instructions was sent to the address by post.

My system is as follows:—on receipt of a Notification (1) the Inspector immediately visits the house and makes careful enquiries, (2) leaves leaflet of instructions, (3) supplies disinfectants, (4) submits a written report to me, (5) receives



further special instructions from me, (6) if necessary I visit also, and (7) the case is kept under observation (as far as possible) until the end of the infectious period, when (8) disinfection of the sick-room is carried out. Unfortunately there does not exist, in any of my Districts, any apparatus for disinfecting clothing, bedding, &c., by steam. The result of paying more careful attention to each individual case of Infectious Disease as it arises is shewn in a striking manner in the following Table, remembering that my system was introduced during 1896, and that 1897 is the first year which has experienced the full benefit of it.

NOTIFICATIONS IN				
		1897.		1896.
Bucklow R.	...	59	...	65
Northwich R.	...	162	...	270
Knutsford U.	...	5	...	12
Middlewich U.	...	31	...	67
Winsford U.	...	47	...	197
Biddulph U.	...	17	...	55
		<hr/>	...	<hr/>
		321	...	666
		<hr/>	...	<hr/>

I have prepared Tables from 1891, but the earlier figures are clearly not reliable, so it is no use publishing them. Thus Middlewich U. is put down as having only one case of Notifiable Disease in 1892! In 1893 a total for all the Districts of 902 is given, the chief factors being Bucklow R. 240, Northwich R. 257, and Winsford U. 267. In 1891 the total is only 153 for all the Districts; but every other year is higher than the figures now given for 1897.

Our labours in the direction of suppressing Infectious Disease would be greatly lightened if parents could only be persuaded to isolate sick children more effectually, and also to keep healthy children out of danger. A string of neighbours taking their children deliberately to view the body of a playmate dead of Diphtheria, (this actually happened), destroys the value of much careful work by the Sanitary Department, and is a sight to make angels weep! The Clergy and School Teachers might give valuable help in this matter, if they would arrange for a short course of Elementary Hygiene in one of the higher standards. It would be an invaluable benefit if the Government would make such a course compulsory.

### THE NOTIFICATION ACT.

The imperfections in this Act are known by experience to all my Councils. A number of memorials have been forwarded to the Local Government Board. The result remains to be seen;

but the subject must not be allowed to drop. The inclusion of Measles is in my opinion important; the sole difficulty being one of finance; I hope some compromise may be discovered. I would gladly exclude Erysipelas; of 52 cases notified to me during 1897, I do not think a single one has been the true Infectious Disease which is meant by the Act, and which is in my opinion very rare. Puerperal Fever should be better defined. Whooping Cough is subject to much the same considerations as Measles. There is also no doubt that public benefit would result from the Notification of Phthisis; but the financial difficulty will postpone this until there is a higher level of public education and experience in Sanitary matters. The system known as "Dual Notification" is never enforced; it would therefore be logical to drop it; and further powers should be given to deal with cases of intentional concealment.

### ISOLATION HOSPITALS.

The Bucklow Rural and Knutsford Urban Councils are partners with four other Urban Councils in a Joint Hospital Board which is now in actual existence. Its work during the coming year will be watched with great interest.

The Northwich Rural and Winsford and Middlewich Urban Councils are again being invited by the County Council to join with another Urban Council in a similar partnership. At the time of writing, negotiations are in progress; but it is impossible to forecast their ultimate result, as there exists a wide divergence of opinion between the Councils concerned. It is greatly to be hoped that some solution of the difficulty will be arrived at; for such Hospitals, while valuable in all cases, may be considered imperatively necessary in some; and one may almost venture to prophesy that their universal provision is chiefly a question of time and of the further spread of knowledge among the public. The Biddulph Urban District has a small Hospital, and the Council has authorised its use at my discretion, but so far we have not been able to induce any patients to make use of it. The prejudice probably arises from the fact that it was originally built for a Small-pox Hospital; but this will no doubt die out in time, as it has done in the case of the Marbury (Northwich R.) and Winsford Hospitals, both of which have been in use during the year.

### PUBLIC WATER SUPPLIES.

A most important Circular dated 17th December, 1897, has been issued by the Local Government Board, urging on each Local Authority the duty of "securing to the inhabitants of their District a proper and sufficient supply of water." It deals mainly with existing supplies; and these will be referred to in

the Local Reports. The following sentence occurs : “ Not only are the Council thus under a responsibility for the wholesomeness of the Water which they themselves supply, but they should by careful enquiry make themselves acquainted with the sources, nature, and quality of the various supplies in all parts of their District, and, in every case in which the result of their enquiries is unsatisfactory, should take all such steps as may be within their powers with the view of supplementing or improving the supplies.” This applies to many Townships in Rural Districts, where the only supply is from shallow wells, often polluted. The question has been debated *ad nauseam* ; with the universal result that a Rural Council finds itself practically helpless. If an owner refuses to comply with a notice served under Section 3 of the Public Health (Water) Act 1878, the Council is empowered by the same Section to execute the necessary works within a given limit of cost, (*viz.* £8 13s. 4d. per house, or in special cases £13 per house), and within this limit it is found practically impossible to provide a supply of any kind except an underground rain-water tank. This in my opinion is not a “satisfactory” supply. On the other hand if action be taken under the Public Health Act 1875, Section 70, and polluted wells be closed, without other provision being made, then the occupiers are frequently driven to shifts which result in their using water more dangerous than that condemned. And finally if the Council execute the necessary works at the expense of the Township under the Public Health Act 1875, Section 51, then it appears that the inhabitants in general are taxed for the benefit of particular owners.

I have never heard the matter advanced in argument beyond this stage ; and so the Council finds itself in the dilemma of being asked to do either an impossibility or an injustice ; with the result that it does nothing.





## GENERAL TABLES.

NOTE.—All Rates are calculated as a proportion to 1000 persons actually living, *except* the Infantile Mortality Rate which is the proportion of Deaths under One Year of age to an assumed number of 1000 Births.



The first group of 4 Districts comprises the Registration Sub-Districts of the Bucklow Rural District. The second group comprises the Sub-Districts of the Northwich Rural District. The third group comprises the independent Urban Districts.

# I. Birth Rates for Twenty Years—1878 to 1897.

	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
AVERAGE FOR ENGLAND & WALES. }	35.9	...	34.6	...	...	...	...	...	...	...	30.6	30.2	29.7	...	...	...	...	...	...	...
ALTRINCHAM R...	35.5	38.0	30.9	25.8	28.5	27.9	29.5	28.1	27.9	26.3	28.5	26.7	25.5	24.0	23.6	23.7	23.0	24.3	22.5	22.2
LYMM R. ...	25.9	23.2	21.3	24.6	18.2	25.0	23.4	26.2	23.7	21.6	23.6	24.5	26.2	22.2	25.2	24.7	19.9	22.0	24.1	26.8
KNUTSFORD R. ...	38.3†	28.7†	30.5†	31.3†	31.1†	31.1†	28.4†	32.1†	27.0†	31.0†	24.3†	29.0†	25.3†	26.5†	26.8†	25.0†	24.1†	23.5*	25.5*	21.9*
WILMSLOW R. ...	34.5	34.8	27.5	21.4	26.6	27.5	24.1	25.8	33.3	28.5	27.2	25.0	26.8	25.0	24.5	26.8	22.3	22.7	23.9	23.7
WEAVERHAM R...	38.2	...	33.6	35.0	35.0	35.3	30.0	31.4	34.6	29.1	33.4	32.5	31.9	31.2	33.0	35.7	31.2	32.9	34.9	34.0
NORTHWICH R. ...	40.2	...	35.0	34.5	38.0	34.0	35.7	35.4	37.9	36.3	32.0	32.7	32.8	42.2	38.2	33.0	38.3	34.9	44.8	37.1
OVER R. ...	41.5	...	35.4	34.8	33.0	34.2	32.2	30.4	33.8	32.7	29.8	30.5	28.9	36.1	29.8	33.4	24.0	32.1	28.8	29.5
MIDDLEWICH R...	35.0	28.5	28.0	22.6	32.0	22.8	30.2	31.4	31.1	28.4	25.0	33.5	27.8	31.2	41.4	29.0	33.3	35.9	30.1	32.4
KNUTSFORD U. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32.6*	26.0*	30.1*
MIDDLEWICH U.	45.5	40.0	38.5	43.0	34.5	41.3	36.6	38.2	34.5	35.4	30.6	30.2	30.9	40.0	39.3	40.0	43.1	36.2	38.6	37.0
WINSFORD U. ...	49.3	...	41.9	39.3	41.1	37.8	38.0	38.4	37.7	34.6	34.1	32.4	31.0	36.3	32.2	36.3	35.1	36.1	36.1	33.6
BIDDULPH U. ...	...	...	...	...	...	...	...	...	...	...	24.3	29.4	31.5	39.2	33.0	38.0	31.6	38.1	34.2	31.2

\* Excluding Workhouse and Gaol.

† Including Workhouse and Gaol.



## II.

## Death Rates for Twenty Years—1878 to 1897.

	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
AVERAGE FOR ENGLAND & WALES. }	21·7	21·0	20·7	...	...	...	...	...	...	...	17·8	17·9	19·2	...	...	...	...	...	...	...
ALTRINCHAM R...	16·0	15·3	14·6	14·2	12·2	12·8	14·8	15·5	15·2	14·9	15·0	14·8	14·2	15·8	15·3	15·8	12·8	14·5	12·3	14·1
LYMM R. ...	15·3	14·4	12·4	14·5	14·8	14·5	16·6	14·4	12·3	12·9	13·6	15·0	14·5	17·7	15·4	13·7	10·5	10·7	13·6	14·2
KNUTSFORD R. ...	16·5*	21·1†	18·8†	17·6†	20·0†	17·8†	15·7*	14·8*	19·7†	19·7†	17·4*	18·8†	18·5†	19·4†	17·1†	20·9†	18·2†	14·2*	13·6*	11·1*
WILMSLOW R. ...	21·0	15·6	13·0	15·2	11·9	16·1	17·4	16·4	22·3	18·7	13·0	17·3	16·3	12·0	13·4	18·7	12·5	21·0	16·4	12·9
WEAVERHAM R...	17·6	23·5	16·7	14·8	18·5	16·1	17·7	14·5	16·5	13·5	13·2	18·8	13·5	15·0	18·6	17·6	15·2	18·9	16·3	16·1
NORTHWICH R. ...	19·2	18·4	16·7	12·5	17·6	17·2	16·0	15·0	15·7	15·0	13·4	14·5	16·1	14·8	20·7	15·2	17·2	17·1	15·5	19·6
OVER R. ...	21·8	24·0	14·5	11·1	19·0	16·4	12·4	19·2	14·8	17·1	15·5	16·0	17·6	18·4	18·2	16·9	13·3	12·9	14·8	14·5
MIDDLEWICH R...	14·4	19·4	11·0	10·8	11·8	20·9	11·4	15·1	15·5	11·8	13·3	14·8	15·5	13·9	16·4	15·3	13·0	13·7	14·1	12·4
KNUTSFORD U. ...	17·3*	19·0*	14·8*	11·8*	18·2*	13·5*	21·0†	17·7*	15·6*	...	12·0*	18·9†	12·4*	13·8*	12·0*	15·0*	13·8*	14·7*	16·5*	15·0*
MIDDLEWICH U..	31·4	28·7	20·6	18·6	21·5	17·2	25·8	23·5	15·3	18·8	13·8	14·6	15·9	21·0	22·4	20·0	11·3	20·8	16·8	15·4
WINSFORD U. ...	27·5	19·0	21·2	17·4	16·0	15·7	17·5	18·9	15·4	17·6	13·2	15·0	15·0	19·2	18·9	17·0	14·2	19·3	14·9	16·7
BIDDULPH U. ...	21·1	25·1	16·2	18·5	...	...	...	...	...	13·4	13·8	16·2	12·0	18·5	14·0	20·4	14·2	15·9	16·4	14·4

\* Excluding Workhouse and Gaol.

† Including Workhouse and Gaol.



# III.                      Zymotic Death Rates for Twenty Years—1878 to 1897.

	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
AVERAGE FOR ENGLAND & WALES. }	3.32	2.39	3.24	...	...	...	...	...	...	...	...	...	2.03	...	...	...	...	...	...	...
ALTRINCHAM R. }																	0.8	0.9	0.9	2.1
LYMM R. }																	0.2	0.2	0.6	2.8
KNUTSFORD R. }	1.6	1.0	1.6	0.8	1.1	1.0	1.3	1.4	0.7	0.9	0.9	1.5	0.4	0.4	0.9	0.7	0.8	0.8	1.1	0.3
WILMSLOW R. }																	1.0	0.8	0.6	1.2
WEAVERHAM R. }																	1.6	0.5	2.3	1.7
NORTHWICH R. }																	2.6	1.3	1.6	4.0
OVER R. }	3.1	2.1	1.8	0.9	0.8	0.9	1.2	2.2	0.9	0.8	0.6	1.2	1.0	0.4	1.5	0.9	0.3	0.9	0.3	0.9
MIDDLEWICH R. }																	1.0	0.7	1.1	0.7
KNUTSFORD U. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.4	1.4	1.9
MIDDLEWICH U. ...	3.9	5.6	2.6	2.1	3.8	1.2	6.2	3.8	0.9	0.0	1.9	2.0	0.0	2.3	0.2	2.4	0.6	2.9	2.9	2.3
WINSFORD U. ...	7.1	2.7	3.3	1.4	2.1	2.0	2.4	4.1	0.8	3.2	0.9	1.2	1.2	1.4	0.9	0.8	1.8	2.6	1.8	4.2
BIDDULPH U. ...	...	...	...	...	...	...	...	...	...	0.2	...	3.0	0.2	2.3	0.4	2.4	0.5	3.3	2.5	1.3





## IV.

## Deaths in First Year of Life per 1,000 Births.

	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
AVERAGE FOR ENGLAND & WALES. }	176	...	150	120	...	...	...	...	...	...	137	...	151	...	...	...	...	...	...	...
ALTRINCHAM R. }																160	141	134	75	143
LYMM R. }																82	54	118	70	59
KNUTSFORD R. }	108	89	110	82	94	94	111	100	122	96	106	120	113	114	113	118	120	81	144	89
WILMSLOW R. }																71	100	182	133	139
WEAVERHAM R. }																159	130	140	147	91
NORTHWICH R. }																203	153	164	105	181
OVER R. }	113	...	133	92	112	105	121	102	118	120	110	125	131	132	129	87	135	111	167	152
MIDDLEWICH R. }																161	100	82	96	165
KNUTSFORD U. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	92	165	171
MIDDLEWICH U. ...	270	153	209	178	179	120	224	123	143	137	127	177	206	172	166	164	87	186	134	182
WINSFORD U. ...	143	...	157	121	128	132	165	139	165	143	109	122	123	173	159	159	117	166	130	184
BIDDULPH U. ...	...	...	...	...	...	...	...	...	...	...	...	210	111	173	154	170	157	144	138	104



## V.

Averages of Rates during 20 Years, divided into 3 periods, and compared with 1897.

	BIRTH RATE.				DEATH RATE.				ZYMOTIC DEATH RATE.				INFANTILE MORTALITY RATE			
	1878-1883.	1884-1890.	1891-1896.	1897.	1878-1883.	1884-1890.	1891-1896.	1897.	1878-1883.	1884-1890.	1891-1896.	1897.	1878-1883.	1884-1890.	1891-1896.	1897.
ALTRINCHAM R...	31.1	27.5	23.5	22.2	14.2	14.9	14.4	14.1			0.8	2.1			123	143
LYMM R. ...	23.0	24.2	23.0	26.8	14.3	14.2	13.6	14.2			0.5	2.8			92	59
KNUTSFORD R. ...	31.8	28.1	26.2	21.9	18.6	17.8	17.2	11.1	1.2	1.0	0.8	0.3	96	110	115	89
WILMSLOW R. ...	28.7	27.2	24.2	23.7	15.5	17.3	15.7	12.9			0.7	1.2			119	139
WEAVERHAM R...	35.2	31.8	33.1	34.0	17.9	15.4	16.8	16.1			1.3	1.7			139	91
NORTHWICH R. ...	36.3	34.9	38.6	37.1	16.9	15.1	16.8	19.6			1.6	4.0			148	181
OVER R. ...	36.2	31.2	30.7	29.5	17.8	16.1	15.8	14.5	1.6	1.1	0.7	0.9	111	118	127	152
MIDDLEWICH R...	33.8	29.6	33.5	32.4	14.7	13.9	14.4	12.4			0.9	0.7			117	165
KNUTSFORD U. ...	...	...	29.3	29.5	15.8	16.3	14.3	15.0	...	...	0.9	1.9	...	...	128	171
MIDDLEWICH U...	40.4	33.8	39.6	37.0	23.0	18.4	18.7	15.4	3.2	2.1	1.9	2.3	185	162	151	182
WINSFORD U. ...	41.9	35.2	35.3	33.6	19.5	16.1	17.2	16.7	3.1	2.0	1.5	4.2	136	138	151	184
BIDDULPH U. ...	...	28.4	35.7	31.2	20.2	13.9	16.6	14.4	...	...	1.9	1.3	...	...	156	104



# Middlewich Urban Council.

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## ANNUAL REPORT OF MEDICAL OFFICER OF HEALTH FOR 1897.

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Population at Census, 1891, 4001.

Estimated Population in middle of 1897, 4750.

Area in Acres, 1095.

Birth Rate per 1,000 living, 37·0.

Death Rate per 1,000 living, 15·6.

Death Rate from Seven Principal Zymotic Diseases, 2·3.

Deaths under one year in proportion to 1,000 Births, 182.

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**Population.**—To form a correct estimate of population appears to have been always a difficulty in this District. The Birth Rates and Death Rates have frequently been so abnormally high as to lead to the belief that the population has been under-estimated (Annual Report, 1888). It has been thought that the Canal Boat population, “floating” in two senses, might account for it. (*loc. cit.*) But an examination of the General Tables seems to shew no great difference in the years following Census years, when the population was accurately known. At present I adhere to the number 4,810 for 1896; which, however, has been seriously diminished during 1897 by the closure of the works of the Cheshire Alkali Company. Calculated to the middle of 1897, I estimate the population at 4,750, though it is probably not so much at the end of the year.

**Twenty Years' Records.**—(*See General Tables*). The maximum Birth Rate is recorded in 1878, (45·5); the minimum in 1889, (30·2). On seven occasions it has exceeded 40, and has never fallen below 30. The fluctuations do not seem to be governed by any general rule. The Death Rates were highest in 1878 and 1879, (31·4 and 28·7), which almost proves that the population was then under-estimated. The minimum was recorded in 1894, (11·3); and this year's figure (15·6) has only been bettered on three other occasions, viz.: 1886 (15·3); 1888

(13·8); and 1889 (14·6). The averages also shew a progressive improvement over the whole period, which is very gratifying. The same may be said of the Zymotic Death Rates, which were 0·0 in 1887 and 1890; and under 1·0 in 1886, 1892, and 1894. They are, however, very irregular, and largely depend upon epidemics of Measles, Whooping Cough, and Diarrhœa. The Infantile Death Rate is very unsatisfactory. Four times it has been above 200; (that is, one-fifth of the children born have died within a year); nine more times it has been above 150. Only once in the whole period has it been below 100, viz.: in 1894, when it was 87 only. "The disproportionate and excessive amount of Infant Mortality in Middlewich is a disaster coming little short, in its momentous indications, of the prevalence of fatal epidemics." (A. R., 1880). There is also a powerful passage, unfortunately too long to quote, in the Annual Report for 1885, dealing with the social conditions which underlie this grave mortality. The only consolation to be gleaned is that, on the averages, the figures are seen to be slightly diminishing.

**Infectious Diseases.**—There have been notified in 1897 18 cases of Scarlet Fever; 2 of Diphtheria; 1 of Enteric Fever; 2 of Puerperal Fever; and 8 of Erysipelas. It is gratifying to add that, with the exception of one case of Puerperal Fever, none of these proved fatal. The total, 31, compares favourably with 67 in 1896, and 53 in 1895. The seasons of occurrence were as follows: January, 2; February, 4; March, 0; April, 3; May, 5; June, 3; July, 4; August, 4; September, 1; October, 1; November, 2; December, 2. The 2 cases of Diphtheria occurred in January and June; the case of Enteric Fever in October; the 2 cases of Puerperal Fever in May and June, (the former fatal). So that, with the possible exception of the second case of Puerperal Fever, none of these cases either arose from another (within the District), or gave rise to another. Six of the cases of Scarlet Fever, between February and April, were believed to be connected together. Nine cases occurred similarly in July and August. The remaining 3, in November and December, were not connected, so far as could be ascertained.

**Disinfection of Premises.**—This has been carried out, by Sulphur Fumigation, in all the above cases. It has, however, been universally declined by the Householder in all the fatal cases of Phthisis, 7 in number; shewing a great lack of appreciation of the infectious nature of this disease on the part of the public.

**Isolation Hospital.**—We are in precisely the same position as last year. (See A. R., 1896; cf. also A. R., 1879).

**Births.**—(See Supplementary Table III.) The total, 176, is less by 10 than in 1896; and the Rate comes down from 38·6 to



37·0. The average Rate for the previous ten years is 36·4. (Supp. Tab. I.)

**Deaths.**—Total 74, (of which 1 occurred in the Workhouse); as against 81 in 1896, and 99 in 1895. Rate 15·6, as against 16·8 and 20·8 (General Table II.) Details for the four quarters are given in Supp. Tab. II. The average Rate for the previous ten years is 17·5 (Supp. Tab. I.)

Zymotic Deaths include 6 Measles, 1 Whooping Cough, 4 Diarrhœa, (Supp. Tab. II.), and give a Rate of 2·3, as against 2·9 for 1896 and 1895, though the average for the previous ten years is only 1·5. As far back as 1880 the endemic prevalence of Diarrhœa was noted, (A. R., 1880); and attention was drawn to the conclusion deduced from this observation, viz., that the soil of the Town was filth-laden. Much has been done since then in construction of sewers and provision of water supply, and the result is seen in a diminishing Zymotic Death Rate: but much yet remains to be done.

The Infantile Mortality is 182. The actual deaths under 1 year of age were 32, classified as follows: Prematurity, Malformation, or Debility from Birth, 6; Teething and Convulsions, 8; Pneumonia, 5; Measles (in each case accompanied by Pneumonia) 4; Whooping Cough, 1; Diarrhœa, 4; Injury, 1; Tuberculous Diseases, 3. Many of these, as can be seen at a glance, might have been avoided. An absolute and unnecessary waste of Infant human life goes on year by year in a manner which is frightful and appalling when the statistics are (as here) collected and examined. Two deaths, both of very young infants, were uncertified. Inquests were held in three other cases, viz.: two young infants, (Burns and Pneumonia, respectively), and one adult (killed by an accident at the Salt Works). Phthisis is recorded 4 times as a cause of death, (Males, 53, 32, 44 years; Female, 40); but 3 children in addition died from Tuberculous Diseases; the Death Rate from Phthisis is therefore 0·8 or 1·5 according to the inclusion or exclusion of the 3 last-mentioned cases.

One death occurred from Puerperal Fever; in one case Influenza is mentioned, this was a baby and is included under the head of Pneumonia. The deaths from "All other diseases" (Table A.) include 1 from Alcoholism, 1 from Cancer, 1 from Child-birth, 1 from Puerperal Convulsions, but present no other special features.

**School Closure.**—From August 16 to September 13, it was found necessary to close all the Public Elementary Schools on account of a severe epidemic of Measles.

**Exposure of Infectious Persons.**—A case was brought to the notice of the Council by the Medical Officer of Health in May;



another in June on the receipt of a letter of complaint from a neighbour : and again in July, on the evidence of the Inspector ; and a third case was reported in August. The Council refused to take any proceedings in any of these cases.

**Public Water Supply.**—The value of the work carried out by the Council is amply attested by the record of the evils which were formerly suffered for lack of pure water. (A. R., 1878, 1880, 1883, 1885, 1886, 1889). The quality of the public water now supplied remains good, and the quantity ample.

**Water Analysis.**—A number of samples have been sent to the County Analyst from suspected Wells, &c. I have, however, no record of the results, as the papers have not passed through my hands.

**Insanitary Property.**—This remains a question of pressing importance. The worst cases have, however, been dealt with during the year ; and legal proceedings have been taken in three cases. (See Inspector's Report).

**Sewers.**—The gradients are not always good, and some of the outlying parts of the town are not served. Extension is required. (A. R., 1878, 1879, 1880, 1886).

**Sewage Outfall Land.**—A Special Report was presented to the Council on October 7th. The Land is stiff clay, and does not permit of any filtration taking place whatever. The money originally spent upon the scheme may be regarded as virtually lost. An attempt is now being made to cut trenches in the clay and fill them with cinders, for the purpose of filtering the sewage, but I have very grave doubts as to the success of the plan. It might do for an effluent from a Settling Tank ; but I am sceptical as to its power to deal with crude sewage, which is what is being attempted.

**Scavenging.**—"In collections of unremoved refuse, disease agencies thrive and multiply. Of such paramount importance is this truth, that it may be affirmed unhesitatingly that the protection of a District from epidemic disasters lies in exact proportion to the thoroughness and promptitude with which domestic cleanliness is observed and enforced." (A. R., 1886). I agree with the Inspector's opinion that Public Scavenging should be undertaken by the Council. Midden-prives should be converted to some more modern, wholesome, and cleanly system. Their continued existence, in my opinion, is a distinct factor in the Death Rate.

**Slaughter Houses.**—These have all been inspected by the Medical Officer of Health, and found on the whole satisfactory.

**Bake Houses.**—The same remark applies.

**Common Lodging Houses.**—These are kept under close surveillance. There have been no recent complaints.

**Black Smoke Nuisance.**—This exists to a considerable extent. A Joint Committee of the Council and the Manufacturers has been formed to endeavour to cope with it.

**Adoptive Acts.**—The Council has not yet adopted the “Infectious Disease (Prevention) Act, 1890.”

**Dairies and Cowsheds.**—The growing importance of attending to the physical well-being of the cattle which supply so large a part of our daily food, is being rapidly recognised in all intelligent and progressive communities. The Council is at present considering the issue of Regulations under the Order.

**Sanitary Inspection.**—This is carried out with great zeal and ability. In my opinion the work done by the Inspector is out of all proportion to the remuneration received, and I think the Council would consult its own best interests by a judicious liberality in this important direction. I have pleasure in appending Mr. Henshall’s Report.

**T. W. H. GARSTANG,**

*M.R.C.S., D.P.H.*

*January 19th, 1898.*



[A] Table of **DEATHS** during the Year 1897, in the *Middlewich Urban*

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.  (Columns for Population and Births are in Table B.)  (a)	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.							(i)
	At all ages, (b)	Under 1 year. (c)	1 and under 5. (d)	5 and under 15. (e)	15 and under 25. (f)	25 and under 65. (g)	65 and upwards. (h)	
Entire District .. ...	73	32	8	1	2	17	13	{ Under 5 ... 5 upwards. ...

The subjoined numbers have also to be taken into

Deaths occurring outside the district among persons not belonging thereto.	...	...	...	...	...	...	1	{ Under 5 ... 5 upwards. ...
Deaths occurring within the district among persons not belonging thereto.	...	...	...	...	...	...	...	{ Under 5. ... 5 upwards. ...

\* The heading of column 19 is left blank for the insertion of Influenza,

[B] Table of **POPULATION, BIRTHS, AND OF NEW CASES OF**  
of Health, during the Year 1897, in the *Middlewich Urban District*;

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.  (a)	POPULATION AT ALL AGES.			Aged under 5 or over 5. (e)	NEW CASES OF KNOWLEDGE			
	Last Census. (b)	Estimated to middle of 1897. (c)	Registered Births. (d)		Small-pox. 1	Scarlatina. 2	Diphtheria. 3	Membranous Croup. 4
Entire District ... ..	4001	4750	176	{ Under 5. 5 upwds.	...	5 13	1 1	...

State here whether "Notification of Infectious Disease" is compulsory

*District, classified according to DISEASES, AGES, and LOCALITIES.*

MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																					
				FEVERS.																	Total.
Small-pox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneu- monia, & Pleurisy.	Heart Disease.	*	Injuries.	All Other Diseases.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
...	...	...	...	...	...	...	...	1	...	...	5 1	1	4	1	4	9 4	3	...	1 1	20 18	
																			22	40 33	

account in judging of the above records of mortality.

[illegible]

or any other disease which it may be thought desirable to record.

**INFECTIOUS SICKNESS,** *coming to the knowledge of the Medical Officer*  
*classified according to* DISEASES, AGES, and LOCALITIES.

SICKNESS IN EACH LOCALITY COMING TO THE OF THE MEDICAL OFFICER OF HEALTH.							NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.		
FEVERS.					Cholera.	Erysipelas.		12	13
Typhus. 5	Enteric or Typhoid. 6	Continued 7	Relapsing 8	Puerperal. 9					
...	...	...	...	...	...	1	...	..	
...	1	...	...	2	...	7	...	...	
								NO ISOLATION HOSPITAL.	

in the District,--Yes. Since when?—1st January, 1890.

## SUPPLEMENTARY TABLE I.

Shewing Births, Birth Rate, Deaths, and General and Zymotic Death Rates, and compared with average of last 10 years ; and Deaths in Old Age and Infancy, and percentages of these to Total Deaths ; for the Year 1897.

TOTAL.			BIRTH RATE.		DEATH RATE.				DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.	
Births.	Deaths	Zymotic Deaths.	Average.	1897.	General.		Zymotic.		At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.
					Average.	1897.	Average.	1897.				
176	74	11	36.4	37.0	17.5	15.6	1.5	2.3	14	32	18	44

## SUPPLEMENTARY TABLE II.

Shewing Deaths, Death Rates, Deaths from Special Diseases, and Old Age and Infantile Deaths, in the Four Quarters of the Year, 1897.

QUARTER ENDING.			Total Deaths.	Rate.	DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.		Measles.	Whooping Cough.	Diarrhoea.	ZYMOTIC DEATHS.		Phthisis.
					At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.				Total.	Rate.	
March	31	...	17	14.5	6	5	35	29	...	...	1	1	0.8	2
June	30	...	22	17.4	4	7	18	32	...	...	...	...	0.0	1
Sept.	30	...	15	12.4	1	8	7	53	6	...	3	9	7.5	1
Dec.	31	...	20	16.7	3	12	15	60	...	1	...	1	0.8	...



# SUPPLEMENTARY TABLE III.—BIRTHS.

	M.	F.	TOTAL.	RATE.
1st Quarter... ..	21	26	47	40·1
2nd „ ... ..	27	25	52	43·9
3rd „ ... ..	19	24	43	35·9
4th „ ... ..	21	13	34	28·4
	88	88	176	37·0

# SUPPLEMENTARY TABLE IV.

Shewing position of Middlewich in the County in 1896, compared with 35 other Urban Districts.

	Best of 36 Urban Districts	Worst of 36 Urban Districts	Middle- wich Figures.	Place of Middle- wich in the List.
Birth Rate ... ..	38·6	14·8	38·6	1
Death Rate ... ..	8·2	23·4	16·8	26
Zymotic Death Rate ... ..	0·0	4·8	2·9	35
Deaths under 1 year to 1000 Births	37	265	134	19

## INSPECTOR'S REPORT.

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The work of the Sanitary Department, with which I am associated, is very much on the increase. In fact it occupies quite five-sixths of my whole time.

There is still a great need for a better system of Sewers in this District, some parts being without. It is impossible to get property efficiently drained in such circumstances, and several cases of disease have been traced to defective drains.

The removal of Ashes and Night-soil will never be thorough and satisfactory until it is undertaken by the Council's own horses and men.

Two Ventilating Shafts have been erected, and the corresponding man-holes sealed. (Bull Ring and Kinderton Street).

**Slaughter Houses.**—There are 12 in the town which are frequently inspected. Most are well adapted to the business. Every facility has been given me by the Occupiers to make inspections.

Every Notified case of Disease has been visited; careful inspection made of premises, drains, and all Sanitary arrangements; disinfectants supplied, and their use supervised; the patient isolated in the best practicable manner; and the premises ultimately disinfected by Sulphur Fumigation.

**Housing of the Working Classes Act.**—During 1897 11 notices were served, affecting 24 houses. Legal proceedings had to be instituted in 3 cases. Closing orders were obtained for 9 houses. Four of these have been repaired, the remainder are now not tenanted.

**Canal Boats.**—253 Boats have been inspected during the year. 34 complaints were made, viz: Not Registered, 1; No Certificates, 8; Want of Marking, 1; Unclean, 1; Overcrowded, 5; Want of General Repairs, 18. Legal proceedings were taken against the owners of the non-registered boat, and a fine of ten shillings and costs was imposed.

The clerical portion of my work is increasing. Letters and Telegrams alone amount to 260.

THOMAS HENSHALL,

*Inspector.*

*January 14th, 1898.*



# Bucklow Rural District.

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## ANNUAL REPORT OF MEDICAL OFFICER OF HEALTH FOR 1897.

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Population at Census, 1891, 20,368.

Estimated Population in middle of 1897, 22,007.

Area in Acres, 58,925.

Birth Rate per 1,000 living, 23·1.

Death Rate per 1,000 living, 13·5.

Death Rate from Seven Principal Zymotic Diseases, 1·1.

Deaths under one year in proportion to 1,000 Births, 120.

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**Population.**—Every precaution has been taken, as detailed at length last year, (A. R., 1896), to arrive at a correct estimate. Altrincham Sub-District is advanced from 9985 to 10375; Lymm Sub-District from 3150 to 3175; Knutsford Sub-District from 3584 to 3602; and Wilmslow Sub-District from 4808 to 4863. The total thus becomes 22007 in place of 21527. If there is any error, I fancy it will be found that it is an underestimate. I hardly think enough allowance has been made for the expansion of Hale (for instance), or possibly Timperley, Dunham, or Northenden; thus affecting the totals of the Altrincham and Wilmslow Sub-Districts.

**Twenty Years' Work.**—(See General Tables, I., II., III., IV., and V.).

**Birth Rate.**—The one striking feature about Tables I. and V. is that the Bucklow District Birth Rate is a steadily diminishing quantity in every Sub-District. This general rule is not affected by the exceptionally large rate shewn in the Lymm Sub-District in 1897. I believe the explanation is a simple one. The Bucklow Union includes no less than seven independent Urban Districts; and these Urban Districts attract to themselves the young adult population, so that the Rural

District proper has an exceptional proportion of middle-aged and old inhabitants.

*Death Rate.*—This has been fairly constant over the whole period, as shewn by the averages in Table V. The extreme annual variations are from 21·0 (Wilmslow Sub-District 1878 and 1895), to 11·1 (Knutsford Sub-District 1897).

*Zymotic Death Rate.*—Variable; but never very high. The worst figures are 1·6 (whole District, 1878 and 1880); and the best 0·2 (Lymm Sub-District 1894 and 1895), 0·3 (Knutsford Sub-District 1897), and 0·4 (whole District 1890).

*Infantile Mortality Figure.*—Varies from 59 (Lymm Sub-District 1897) to 182 (Wilmslow Sub-District 1895). The averages are extremely low; and of course this favourable feature is independent of the low Birth Rate.

*Various.*—A warning as to the danger of Phthisis and an explanation of its causation, appears in the first Report (1878) ever presented to the Council. The Zymotic Death Rate is also seized upon, at that early period, as an important index to the health of the District. Water supply from wells and cisterns is discussed in 1879. Isolation Hospital Accommodation is mentioned almost every year, and in the earlier years in a spirit of opposition. In the 1887 Report, allusion is made to a scheme for providing a large Hospital in 1878, the proposed site then being Hale. So it has taken just 20 years for this idea to ripen and bear fruit! As far back as 1889 it appears that application had been made to the Altrincham Urban District Council for the occasional use of the Altrincham Infectious Hospital in cases of emergency, (and assuming that there was room), but the application then met with the same refusal that attended my own repetition of the request in the beginning of 1897. The pollution of the Sinderland Brook is fully dealt with in the Report for 1889; and in 1890 the unfortunate result of the legal proceedings is recorded, (due to an imperfectly prepared case), which has resulted in continuing pollution till 1897, when other means have been used (see *postea*) which it is expected will have a more fortunate termination.

**Prevention of Infectious Disease.**—The measures adopted, (see paragraph, “Value of Notification” in the preliminary chapter), have been uniformly successful. Disinfection has been carried out in 32 cases out of 53 notified; (this is excluding Erysipelas); but as these occurred in 37 houses, it only leaves 5 unaccounted for. And this may fairly be balanced by the disinfection of 7 premises after deaths from Phthisis. Nothing in the shape of an epidemic at any time threatened our serenity, except the occurrence of a few cases of Scarlet Fever in the Lymm Sub-District, first in the early Spring, and afterwards in the late Autumn; but the total number of cases did not

exceed 24, affecting only 13 houses, in both outbreaks put together, in the whole of the Townships of Carrington, Partington, Warburton, and High Legh.

**Isolation Hospital.**—The Combination of Authorities referred to last year has now resulted in the formation of the Bucklow Joint Hospital Board. The Lymm Urban District seceded from the Combination, and however much Lymm may in the future have cause to regret this short-sighted policy, it is certain that its absence will very materially simplify the question of Sites for the Joint Board. The Bucklow Council has 10 Members on the Board, and the following Urban Councils have respectively: Sale, 4; Wilmslow, 3; Ashton-on-Mersey, 2; Knutsford, 2; Alderley, 1. Total, 22. As the Joint Board is an independent body, its proceedings cannot be chronicled here; suffice it to say that great hopes are cherished of valuable work to be done, and protection to be afforded.

### Infectious Diseases Notified.

	1895.	1896.	1897.
Small Pox ... ..	2	...	...
Scarlatina ... ..	39	31	42
Diphtheria ... ..	18	9	3
Enteric Fever ... ..	12	19	8
Puerperal Fever ... ..	3	1	...
Erysipelas ... ..	5	5	6
Total ... ..	79	65	59
Case Rate ... ..	3·7	3·0	2·7

For the third year in succession the District has a record to be proud of, and still steadily improving. The last year shews a slight increase in Scarlet Fever, but a large diminution in Diphtheria and Enteric Fever. Six cases proved fatal, viz: 3 Enteric Fever, 2 Diphtheria, 1 Scarlet Fever. Of the 13 Townships in the Knutsford Sub-District, 11 had no cases of Infectious Disease, 1 had a single case of Scarlet Fever, and 1 had a single case of Enteric Fever, contracted at a distance. Similarly in the Wilmslow Sub-District, 1 Township had a single case of Diphtheria, and 1 had a single case of Enteric Fever; the rest had no cases. (See Supp. Tab. I). I consider that we have reached the best possible position that is practically attainable. It would be Utopian to anticipate the entire absence of notifiable diseases; and as we have been so long free from serious epidemics, it is quite likely that 1898 or 1899 may shew

a falling off, due, not to any fault of the Sanitary Department, but to a natural increase of susceptible persons.

*Erysipelas*.—6 cases, which do not need particularisation.

*Puerperal Fever*.—Entirely absent.

*Diphtheria*.—Only 3 cases. In February a fatal case at Partington (F. 16) on premises where a fatal case of Enteric Fever occurred in August, 1896. In April a case (M. 21½) in Hale: and in September a fatal case (M. 4) in Northenden. This occurred on the site of previous outbreaks, and was supposed to be connected with bad smells from the river bed. The fatality therefore was 66 per cent.

*Enteric Fever*.—8 cases. In January a case at Timperley (F. 8) which was removed to the Altrincham General Hospital. Also another case (M. 19), infection traced to insanitary premises at Brereton. In March a fatal case at Warburton, (M. 35). In May a case at Higher Peover, (M. 24), which is remarkable for the fact that the patient was removed from Tyldesley in Lancashire by Ambulance, by road. The distance is about 30 miles, and the patient was in the second week of the disease. It is marvellous that no ill-results followed. In October there was a fatal case at Baguley (M. 61); a fatal case at Northen Etchells, (M. 16), infection from Burnage; a case at High Legh (F. 17), infection from Blackpool; and a case in Hale (M. 29). The fatality therefore was 38 per cent.

*Scarlet Fever*.—42 cases. Wilmslow Sub-District, 0. Knutsford Sub-District, 1, (Ollerton, February). In the Altrincham Sub-District, Ashley had 1 case in October; Dunham 1 case in February, which was removed to Eccles; Baguley 2 cases (1 house) in October; Timperley 1 case in June and 1 in December; and Hale 1 in January, 1 in April, 1 in May, 1 in September, 2 (1 house) in October, and 1 in December. In the Lymm Sub-District, Aston-by-Budworth had 4 cases (1 house) in October and November: Warburton had 1 in August and 1 in October; Carrington had 4 (1 house) in March; 1 in September, and 2 (1 house) in October. Partington had 4 in September, (2 houses), and 3 in October; and High Legh had 5 (1 house) in February, 1 in April, and 2 (1 house) in September. The age distribution was 7 under 5 years; 16 between 5 and 10 years; 10 between 10 and 20 years; 5 between 20 and 30 years; and 4 upwards of 30 years. There is here an unusual proportion of adults. The only fatal case was a child of 3 years, at Partington, in September. The fatality therefore was only 2·4 per cent.

**School Closure**.—This has been a very heavy item during 1897; and has been entirely in connection with the epidemic of Measles which has distinguished the year. It will be sufficient to enumerate the Schools.



Carrington	...	...	...	April 26 to May 22.
Partington	...	...	...	May 15 to May 31.
Ashley	...	...	...	May 31 to June 26.
Warburton	...	...	...	Aug. 9 to Aug. 23.
High Legh	...	...	...	Sep. 27 to Oct. 30.
Mobberley	...	...	...	Oct. 21 to Nov. 13.
Rostherne	...	...	..	Oct. 21 to Nov. 20.
Tabley Inferior	...	...	...	Nov. 5 to Dec. 4.
Baguley	...	...	...	Nov. 8 to Nov. 20.
Timperley	...	...	...	Nov. 25 to Dec. 18.
Mobberley (second time)	...	...	...	Dec. 11 to Dec. 31.

**Births.**—(Supp. Tab. III. See remarks as to this Table in Report of Northwich Rural District). The total number is 509, or 3 more than in 1896. Of these there were 14 illegitimate births, viz: 6 in the Altrincham, 3 in the Lymm, 3 in the Knutsford, 2 in the Wilmslow Sub-Districts. The Rate is 23·1, as compared with 23·4 in 1896; and is almost the lowest in the County. The average for the last 10 years is 24·6. In the Lymm Sub-District the 1897 Rate is above the average, being the highest ever recorded; but all the other Sub-Districts are below the average, and of them Altrincham and Knutsford are the lowest recorded.

**Deaths.**—(Supp. Tab. IV. See remarks on this Table, as above). The total number is 298, (after making the necessary corrections as shewn at the foot of Table A.) which is 5 more than in 1896. The Rate is 13·5 compared with 13·6 in 1896; the average for the last 10 years being 14·6. The Altrincham and Lymm Sub-Districts are this year distinctly higher than the Knutsford and Wilmslow Sub-Districts, which as shewn by the averages in Supp. Tab. II., is exactly the reverse of what usually happens.

*Zymotic Deaths.*—Scarlatina, 1; Diphtheria, 2; Enteric Fever, 3; Measles, 16; Whooping Cough, 1; Diarrhœa, 14. Total, 37. Rate 1·1; compared to 0·8 in 1895 and 1896. The difference is almost entirely due to the Measles Epidemic for which 1897 will long be remembered. There was also more Diarrhœa than usual, owing to the hot summer.

*Puerperal Fever* is entirely absent.

*Erysipelas* caused no deaths.

*Phthisis* is given as the cause of 19 deaths; exactly the same number as in 1896, and compared with 14 in 1895. I find that in 1890 my predecessor drew attention to the persistently high numbers of deaths from this cause, giving them as 43 in 1890, and 34 in 1889. As the population has been reduced since by about one-fourth, these figures would represent about 32 and 25 on the present population. The average of 1889—90 therefore was 28·5, while the average of 1895—6—7 is 17·3, an improve-

ment of 11·2, a result as gratifying as it is startling. The Rate for 1897 is 0·8. Besides these deaths, however, there are 4 more (occurring in children) believed to be due to tuberculous diseases; and if these were included (as I consider they ought to be) the total would be 23 and the Rate 1·0. These figures are satisfactory.

*Influenza* is not given a special column in Table A, as although it occurs 10 times, 9 of these are classed as Bronchitis or Pneumonia, and 1 as Heart Disease. Dunham had 2 cases, in April (F. 78) and July (M. 53); Hale had 3 cases, in April (F. 90, and F. 63) and May (F. 83); Timperley 1 in July (M. 39); and Baguley 1 in July (M. 30). High Legh had 1 in March (F. 64); Carrington 1 in August (F. 60); and Northenden 1 in July (F. 65). Thus 7 were in the Altrincham, 2 in the Lymm, and 1 in the Wilmslow Sub-Districts. 3 were Males, 7 were Females. 7 were at, or over, 60 years.

*Injuries*.—12 deaths, of which 7 do not belong to the District. January 7, Dunham, (M. 32, Rawtenstall) fractured skull. January 23, Timperley (F. 7) suffocated by burning. January 29, Dunham, (M. 38) cut throat. March 14, Dunham (M. 35, stranger) burnt in hay-loft. April 9, Hale (M. 48) suicide by strangulation. April 26, Dunham (M. 56, stranger) found drowned. August 5, Hale (M. 56) kicked by a horse. September 12, Timperley (M. 32, Stretford) bicycle accident. February 27, Bexton (M. 64, Manchester) cut throat. March 19, Mere (M. 69) fall. March 24, Mobberley (M. 37, Heaton Norris) jump from train. August 5, Northen Etchells (F. 41, Altrincham) suicide on railway.

*Inquests* have been held, in addition to the above cases, in the following instances:—February 7, Dunham (F. 7) Pneumonia. June 5, Timperley (M. 24) Syncope. June 1, Hale (M. 38) Alcoholism. July 15, Hale (F. 53) shock. October 5, Timperley (M. 48,) Syncope. October 11, Hale (F. 3) Natural Causes. March 6, Carrington (F. 3 mos.) Convulsions. April 28, Marthall (F. 1) Pneumonia. January 3, Styal (F. 3 mos.) Natural Causes. February 23, Northenden (F. 14) Uræmia. October 12, Northen Etchells (F. 3 mos.) Inflammation of Bowels.

*All other Diseases*.—The deaths classed under this head contain nothing requiring special notice, except that Cancer occurs 17 times; Accidents of Child-birth 4 times; Pernicious Anæmia, Melancholia, and Angina Pectoris, once each.

*Infantile Deaths*.—Total 61. Proportion to 1000 Births, 120. This is a better figure than many places can shew, but it is still far too high. The deaths under 1 year are classified as follows:—



SUB-DISTRICT.		Prenaturity, Debility, and Malformation.	Convulsions.	Measles, Whooping Cough, and Diarrhea.	Bronchitis and Pneumonia.	Miscellaneous.	Total.
Altrincham	...	4	8	10	5	6	33
Lymm	...	1	1	1	...	2	5
Knutsford	...	1	...	1	2	2	6
Wilmslow	...	3	1	6	1	6	17
Total	...	9	10	18	8	16	61

The whole of the deaths in the 3rd and 4th columns, and probably many of those in the 2nd and 5th columns could have been avoided. About 40 of the deaths were therefore quite "unnecessary." (See remarks on this point in Northwich Report).

**Water Analysis and Water Supplies.**—The following samples have been analysed by the Medical Officer of Health for the Council; besides a considerable number sent to him privately.

DATE.		LOCALITY.		RESULT.
Mar.	13	Warburton	...	Very Bad.
Mar.	13	Dunham Massey	...	Very Bad.
Mar.	31	Bollington	...	Very Good.
Mar.	31	Bollington	...	Good.
Apr.	19	Timperley	...	Good.
Apr.	19	Timperley	...	Somewhat Doubtful.
Apr.	26	Dunham Massey	...	Good.
June	10	Timperley	...	Very Bad.
July	2	Timperley	...	Bad.
Aug.	1	Peover Superior	...	Bad.
Aug.	1	Peover Superior	...	Bad.
Aug.	1	Hale	...	Bad.
Aug.	27	Timperley	...	Bad.
Nov.	1	Northern Etchells	...	Bad.
Nov.	1	Timperley	...	Bad.
Dec.	24	Timperley	...	Bad.

The examination of Water Samples taken within the District for private persons, resulted as follows: Very Good, 2; Good, 4; Doubtful, 1; Bad, 6; Very Bad, 3.

In my last Report (p. 49) I stated that Partington and Carrington had been supplied by the Manchester Corporation; but I now find that this was an error as regards Carrington. The provision of the supply here is still the subject of negotiations, which however progress but slowly and unsatisfactorily. Many Townships, as the Council has been reminded in two previous Annual Reports, remain very badly supplied. There is no doubt that their progress is much hindered thereby. This is perhaps the only matter in which the Bucklow Council is not abreast of its duties. A Committee was appointed in the early part of 1897 to consider questions of water supply, which held several meetings, and considered several Reports; but no action was taken, as the evidence in each case seemed to point to an expense greater than could be borne by the Townships concerned, which are mainly characterised by scattered population and small rateable value. Nevertheless I still believe, looking at the achievements of neighbouring Authorities, that it ought to be possible to find some solution of the problem, which is of vital importance; and as the Committee has hitherto restricted itself to the consideration of the suggestions of its own Officers, I think it would be worth while to obtain an opinion from an independent expert Water-Engineer, before finally abandoning the question in despair, as insoluble.

**Sewage Outfalls.**—Hale, Dunham, Timperley, and Northenden are the four Townships in the Rural District which possess Sewage Works. They are all subject to frequent examination by the Inspector of the Mersey and Irwell Joint Committee; and on only one occasion during the year was there a distinctly bad report. This affected the Timperley Outfall and was found to be occasioned by an accident to one of the Tanks.

Nevertheless it is fully recognised by the Council that the three first-named Townships have outgrown their present accommodation, and it is contemplated to spend large sums of money in providing better and more modern Sewage Works. The Hale scheme includes the construction of new main sewers of considerable length, the purchase of the Outfall site (at present only rented), and the construction of New Works. The cost will probably exceed £10,000. The Dunham and Timperley schemes are in an earlier stage, but will doubtless be steadily proceeded with.

**Rivers' Pollution Prevention Acts, 1876 and 1893.**—The County Council having instituted enquiries as to those parts of the County not under the jurisdiction of the Mersey and Irwell Committee, it has been necessary to examine specially the Arley, Tabley, and Peover Brooks, which are ultimate tributaries of the River Weaver. They flow through 8 Townships, which have an area of 17,186 acres, and a population of about

3,300. 18 cases of pollution have been discovered, and the necessary Notices have been served in each case to secure abatement. The total amount of pollution is however microscopic in comparison with what goes on in neighbouring Districts, and after the above-named Notices have been enforced, may be considered practically non-existent.

During September a number of inspections were made of the Sinderland Brook, owing to complaints from farmers on its banks. Serious sources of pollution were discovered, and the matter was made the subject of a Special Report, of which therefore copies were forwarded to the County Council and Local Government Board. As a result, the County Council communicated with the Mersey and Irwell Committee, and that body now has the matter in hand. The pollution of Timperley Brook by waste matters from a Laundry has been discontinued, by the laying of proper drains connecting to the nearest Sewer.

**District Inspections.**—Now that there are three Officers in the Department, no part of the District goes very long without receiving a visit from one or other.

**Overcrowding.**—18 cases have been dealt with. Many occurred in cottages having only one bedroom, which were tenanted by many more persons than their capacity warranted.

**Housing of the Working Classes Acts 1885 and 1890.**—Two cases have been dealt with under these Acts, of which one is still pending. The other house remains untenanted, and is to be pulled down in the Spring.

**Dairies, Cow-sheds, and Milk-shops Order, 1885.**—The Bucklow Council has made a very notable and note-worthy advance during 1897 in permitting the Medical Officer of Health to organise a special and systematic enquiry into the conditions under which the cattle are kept which supply milk to the numerous neighbouring Urban Districts, as well as to Manchester, etc. The result of the enquiry, as far as it has gone, has satisfied every member of the Council that the new departure has been thoroughly justified. I need not waste time in going over the facts and arguments which conclusively prove (1) that Tuberculosis is alarmingly prevalent among cattle in Cheshire (different authorities estimating the number of affected cattle at from 25 to 75 per cent); (2) that the disease is fostered by keeping the cattle in dark, unventilated, undrained cow-sheds; (3) that the disease may be transmitted to the human being (especially to young children) by the milk from diseased cows;—because the Council has accepted them, with the logical deduction that a diminution in the death rate from Tuberculous diseases may be reasonably expected to follow from steps taken to improve the sanitary condition of cow-sheds and their inmates;

and that such a result is worthy of the best efforts of the Council for its attainment. I venture merely to record that in my humble opinion the action of the Council in this matter places it in the forefront of energetic and conscientious Rural District Councils.

The necessity for an Assistant Inspector was readily recognised; and on July 14, Mr. James Turner was appointed, and immediately entered upon the duty of visiting, inspecting, and reporting upon every cow-shed in the District; working for convenience by Townships. During the last half of 1897, 17 Townships have been dealt with, viz.: Aston-by-Budworth, Ashley, Bexton, Dunham Massey, Hale, High Legh, Mere, Mobberley, Peover Inferior, Peover Superior, Pickmere, Rostherne, Styal, Tabley Inferior, Tabley Superior, Toft, and Timperley. A printed copy of the Council's Regulations, with extracts from the Dairies, etc., Order itself, has been sent to all known Cow-keepers. 102 new registrations have in consequence been made. 413 notices as to lime-washing were sent out in October, and it is proposed to give a similar reminder each May and October. All Townships have been publicly placarded with Notices as to Registration, etc.

Very exaggerated reports have been circulated in the neighbourhood as to the undue severity of the Council's Officers; and the ruin to both landlord and tenant which would ensue. These have not been believed by the Council itself, which has issued without a single dissentient voice, after due examination, every notice that the Inspector has asked for. It is, therefore, for the benefit of landlords, tenants, and the general public as well, that I desire to make formal and official record of what has really been done.

371 Farms were inspected. Of these 67 were found satisfactory, and 304 required more or less alteration and improvement. Out of these 304, the 25 worst cases, (an average of  $1\frac{1}{2}$  per Township), were carefully selected without fear or favour, and reported to the Council; and in 3 instances, where the dilapidations were such that the sheds were not fit for use at all, immediate improvements have been insisted upon, and are now in progress. In the remainder, full consideration has been given to the time of year and other difficulties, and the time for executing the needed alterations has been extended to the Spring of 1898. In almost every case the owners have promised to do the work. And the fact that our requirements are not oppressive is conclusively established, once for all, by the fact that each owner, who began by loud and indignant protests, having been invited to make a joint examination of the condemned premises with the Inspector, has been constrained to admit that he was not aware of the true state of his own property, and has



ended by a voluntary admission of the necessity of alterations, and a promise to carry them out in the Spring.

We propose to continue upon the same lines with the remaining Townships.

In many cases it has been observed that the sheds were made worse than they need have been by the dirty habits of the tenants. When light and air are admitted by the landlord to these foul places, it is hoped that the tenant will be shamed into a nearer approach to cleanliness.

The resulting benefit to the cattle, to the milk, and to all milk-consumers will not be long (I venture to predict) in making itself evident; and within five years' time, people will look back with astonishment, and almost with incredulity, to the extraordinary state of affairs which had existed for generations before 1897, but which an enlightened public opinion will now rapidly reform off the face of the earth.

**Factory and Workshop Act, 1891.**—There has been no opportunity of doing very much work under this Act. The Register contains 24 Workshops, and, these have been visited from time to time.

In conclusion, I respectfully assure the Council that every Officer in the Sanitary Department is most warmly appreciative of the uniform kindness received from the Council; and the knowledge that honest work always receives fitting recognition will continue to act as an incentive to each Officer to give his very best services to the Council; and they will continue to believe, as they are proud to do, that they have the honour to serve one of the most enlightened and progressive Rural District Councils in the Kingdom.

**T. W. H. GARSTANG,**

*M.R.C.S., D.P.H.*

*January 24th, 1898.*



[A] Table of **DEATHS** during the Year 1897, in the Bucklow Rural

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities. (Columns for Population and Births are in Table B.) Registration Sub-Districts of (a)	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.							(i)
	At all ages. (b)	Under 1 year. (c)	1 and under 5. (d)	5 and under 15. (e)	15 and under 25. (f)	25 and under 65. (g)	65 and upwards. (h)	
Altrincham ... ..	146	33	17	6	4	45	41	Under 5 ... 5 upwards ...
Consumption Hospital ...	9	...	1	...	5	3	...	Under 5 ... 5 upwards ...
Lymm ... ..	45	5	6	2	4	16	12	Under 5 ... 5 upwards ...
Knutsford ... ..	42	7	1	...	...	11	23	Under 5 ... 5 upwards ...
Wilmslow ... ..	63	16	2	2	5	18	20	Under 5 ... 5 upwards ...
TOTALS ... ..	305	61	27	10	18	93	96	Under 5 ... 5 upwards ...

The subjoined numbers have also to be taken into

Deaths occurring outside the district among persons be- longing thereto.	9	...	...	...	...	1	8	Under 5 ... 5 upwards. ...
Deaths occurring within the district among persons not belonging thereto.	16	...	1	...	5	10	...	Under 5 ... 5 upwards. ...

\* The heading of column 19 is left blank for the insertion of Influenza,

[B] Table of **POPULATION, BIRTHS, AND OF NEW CASES OF**  
of Health, during the Year 1897, in the Bucklow Rural District;

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities. Registration Sub-Districts of (a)	POPULATION AT ALL AGES.			Aged under 5 or over 5. (e)	NEW CASES OF KNOWLEDGE			
	Last Census. (b)	Estimated to middle of 1897. (c)	Registered Births. (d)		Small-pox. 1	Scarlatina. 2	Diphtheria. 3	Membranous Group. 4
Altrincham ... ..	8894	10375	230	Under 5. 5 upwds.	...	8	1	...
Consumption Hospital ...	?	?	0	Under 5. 5 upwds.	...	4	...	...
Lymm ... ..	3390	3167	85	Under 5. 5 upwds.	...	1	...	...
Knutsford ... ..	3661	3602	79	Under 5. 5 upwds.	...	5	...	...
Wilmslow ... ..	4437	4863	115	Under 5. 5 upwds.	...	23	1	...
TOTALS ... ..	20382	22007	509	Under 5. 5 upwds.	...	14	1	1

State here whether "Notification of Infectious Disease" is compulsory



*District, classified according to DISEASES, AGES, and LOCALITIES.*

MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																						
Small-pox.	Scarlatina.	Diphtheria.	Membranous Croup.	FEVERS.					Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneu- monia, & Pleurisy.	Heart Disease.	*	Injuries.	All Other Diseases.	Total.	
				Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
...	...	...	...	...	...	...	...	...	...	...	7	1	11	...	...	10	...	...	...	21	50	
...	...	...	...	...	1	...	...	...	...	...	1	...	1	1	9	20	15	...	...	40	96	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	...	...	1	1	
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	11	
...	...	1	...	...	1	...	...	...	...	...	2	...	...	...	2	7	4	...	17	34	8	
...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	6	5	...	5	34	8	
...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	5	2	21	34	8	
...	...	...	...	...	1	...	...	...	...	...	1	...	3	...	...	3	...	...	10	18	34	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	5	6	...	2	25	45	
...	1	...	1	...	...	...	...	...	...	13	1	...	14	...	1	15	...	...	...	42	88	
...	1	...	...	...	3	...	...	...	...	3	...	...	1	1	25	38	30	...	12	103	217	

account in judging of the above records of mortality.

...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	6	...	9
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	...	7	...	...	15

or any other disease which it may be thought desirable to record.

**INFECTIOUS SICKNESS,** coming to the knowledge of the Medical Officer  
classified according to DISEASES, AGES, and LOCALITIES.

SICKNESS IN EACH LOCALITY COMING TO THE OF THE MEDICAL OFFICER OF HEALTH.										NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.
FEVERS.					Cholera.	Erysipelas.	12	13		
Typhus. 5	Enteric or Typhoid. 6	Continued 7	Relapsing 8	Puerperal. 9						
...	...	...	...	...	...	...	...	...	NO ISOLATION HOSPITAL.	
...	4	...	...	...	...	5	...	...		
...	...	...	...	...	...	...	...	...		
...	...	...	...	...	...	...	...	...		
...	2	...	...	...	...	1	...	...		
...	...	...	...	...	...	...	...	...		
...	1	...	...	...	...	...	...	...		
...	...	...	...	...	...	...	...	...		
...	1	...	...	...	...	...	...	...		
...	...	...	...	...	...	...	...	...		
...	8	...	...	...	...	6	...	...		

in the District,--Yes. Since when?--1st January, 1890.

## SUPPLEMENTARY TABLE I.

Cases of Infectious Diseases Notified, 1897, arranged according to Localities

	Scarlet Fever.	Diphtheria and Membranous Croup.	Enteric Fever.	Puerperal Fever.	Erysipelas.	Total.		Scarlet Fever.	Diphtheria and Membranous Croup.	Enteric Fever.	Puerperal Fever.	Erysipelas.	Total.
Ashley ...	1	...	...	...	2	3	Agden ...	...	...	...	...	...	...
Baguley ...	2	...	1	...	...	3	Aston-by-Budworth ...	4	...	...	...	...	4
Dunham Massey ...	1	...	...	...	1	2	Bollington ...	...	...	...	...	...	...
Hale ...	7	1	1	...	2	11	Carrington ...	7	...	...	...	...	7
Timperley ...	2	...	2	...	...	4	High Legh ...	8	...	1	...	...	9
							Millington ...	...	...	...	...	...	...
							Partington ...	7	1	...	...	1	9
							Warburton ...	2	...	1	...	...	3
ALTRINCHAM...	13	1	4	...	5	23							
							LYMM ...	28	1	2	...	1	32
Bexton ...	...	...	...	...	...	...							
Marthall ...	...	...	...	...	...	...							
Mere ...	...	...	...	...	...	...							
Ollerton ...	1	...	...	...	...	1	Mobberley ...	...	...	...	...	...	...
Peover Inferior ..	...	...	...	...	...	...	Northenden ...	...	1	...	...	...	...
Peover Superior ...	...	...	1	...	...	1	Northen Etchells ...	...	...	1	...	...	...
Pickmere ...	...	...	...	...	...	...	Styal ...	...	...	...	...	...	...
Plumbley ...	...	...	...	...	...	...							
Rostherne ...	...	...	...	...	...	...							
Tabley Inferior...	...	...	...	...	...	...							
Tabley Superior ...	...	...	...	...	...	...	WILMSLOW ...	...	1	1	...	...	2
Tatton ...	...	...	...	...	...	...							
Toft ...	...	...	...	...	...	...							
							Altrincham ...	13	1	4	...	5	23
							Lymm ...	28	1	2	...	1	32
KNUTSFORD ...	1	...	1	...	...	2	Knutsford ...	1	...	1	...	...	2
							Wilmslow ...	...	1	1	...	...	2
							Grand Total ...	42	3	8	...	6	59

## SUPPLEMENTARY TABLE II.

Shewing Births, Birth Rate, Deaths, and General and Zymotic Death Rates, and compared with average of last 10 years ; and Deaths in Old Age and Infancy, and percentages of these to Total Deaths ; for the Year 1897.

	TOTAL.			BIRTH RATE.		DEATH RATE.				DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.	
	Births.	Deaths	Zymotic Deaths.	Average.	1897.	General.		Zymotic.		At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.
						Average.	1897.	Average.	1897.				
Altrincham.	230	146	21	24.8	22.2	14.5	14.1	0.8	2.1	43	31	29	21
Lymm ...	85	46	9	23.4	26.8	13.7	14.2	0.6	2.8	12	5	26	10
Knutsford...	79	43	1	25.1	21.9	17.7	11.1	0.8	0.3	27	6	63	14
Wilmslow ...	115	63	6	25.2	23.7	15.9	12.9	0.8	1.2	22	15	35	24
	509	298	37	24.6	23.1	14.6	13.5	0.7	1.3	104	57	35	19

## SUPPLEMENTARY TABLE III.—BIRTHS.

	1st Quarter.				2nd Quarter.				3rd Quarter.				4th Quarter.				TOTAL.			
	M.	F.	Total.	Rate.	M.	F.	Total.	Rate.	M.	F.	Total.	Rate.	M.	F.	Total.	Rate.	M.	F.	Total.	Rate.
Altrincham	26	37	63	24.6	37	32	69	26.6	26	27	53	20.2	21	24	45	17.2	110	120	230	22.1
Lymm	9	12	21	26.8	10	6	16	20.2	12	9	21	26.3	15	12	27	33.8	46	39	85	26.8
Knutsford	8	10	18	20.2	6	13	19	21.1	7	18	25	27.5	9	8	17	18.7	30	49	79	21.9
Wilmslow	19	8	27	22.4	13	19	32	26.4	18	15	33	26.9	15	8	23	18.7	65	50	115	23.6
	62	67	129	23.7	66	70	136	24.8	63	69	132	23.8	60	52	112	20.2	251	258	509	23.1

## SUPPLEMENTARY TABLE IV.—DEATHS.

	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.
Altrincham .	35	13·6	38	14·6	36	13·7	38	14·5	147	14·1
Lymm ...	17	21·7	12	15·1	11	13·7	5	6·3	45	14·2
Knutsford ...	11	12·4	17	18·9	7	7·7	9	9·9	44	12·2
Wilmslow ...	13	10·8	16	13·2	15	12·2	18	14·7	62	12·7
	76	14·0	83	15·1	69	12·4	70	12·6	298	13·5

## SUPPLEMENTARY TABLE V.

Shewing the position of the Sub-Districts as compared with 29 other Rural Districts and Sub-Districts in Cheshire in 1896.

	Birth Rate.	Place in List.	Death Rate.	Place in List.	Zymotic Death Rate.	Place in List.	Infantile Mortality Figure.	Place in List.
Best of 33 ...	44·8		10·8		0·0		70	
Worst of 33.	18·5		20·4		3·5		168	
Altrincham .	22·5	24	11·9	4	0·9	15	75	4
Lymm ...	22·5	24	14·2	15	0·6	9	70	1
Knutsford ...	25·1	17	13·3	12	0·8	10	144	29
Wilmslow ...	21·8	27	16·8	28	0·6	9	133	27

## SUPPLEMENTARY TABLE VI.

Shewing Population, Estimated, 1897; Total Deaths, Deaths from Special Diseases, and at Special Ages, in entire Sanitary District, the Registration Sub-Districts, and the individual Townships, in 1897.

POPULATION ESTIMATED 1897.	REGISTRATION  DISTRICTS  AND TOWNSHIPS.	TOTAL DEATHS.	DEATHS FROM SPECIAL DISEASES.							TWO GROUPS OF AGES.		
			Scarlet Fever.	Diphtheria.	Enteric Fever.	Measles.	Whooping Cough.	Diarrhoea.	Total Zymotic.	Phthisis.	At 65 Years and Upwards.	Under One Year.
420	Ashley ...	4	...	...	...	...	...	1	1	...	1	...
890	Baguley ...	12	...	...	1	3	...	1	5	...	3	2
2150	Dunham Massey ...	22	...	...	...	...	...	2	2	1	8	8
4125	Hale ...	72	...	...	...	4	1	2	7	6	21	13
2790	Timperley ...	37	...	...	...	1	...	5	6	3	12	9
10375	ALTRINCHAM R.S.D.	147	...	...	1	8	1	11	21	10	45	32
97	Agden ...	1	...	...	...	...	...	...	...	...	...	...
380	Aston-by-Budworth ...	5	...	...	...	...	...	...	...	1	2	...
223	Bollington ...	4	...	...	...	1	...	...	1	...	1	...
420	Carrington ...	6	...	...	...	1	...	...	1	...	1	2
844	High Legh ...	9	...	...	...	...	...	...	...	...	3	...
283	Millington ...	1	...	...	...	...	...	...	...	...	1	...
500	Partington ...	8	1	1	...	1	...	...	3	1	1	1
420	Warburton ...	11	...	...	1	3	...	...	4	1	3	2
3167	LYMM R.S.D.	45	1	1	1	6	...	...	9	3	12	5
120	Bexton ...	...	...	...	...	...	...	...	...	...	...	...
223	Marthall ...	3	...	...	...	...	...	...	...	...	1	...
401	Mere ...	9	...	...	...	1	...	...	1	...	6	1
275	Ollerton ...	2	...	...	...	...	...	...	...	...	...	2
132	Peover Inferior ...	5	...	...	...	...	...	...	...	...	2	...
470	Peover Superior ...	3	...	...	...	...	...	...	...	...	2	1
219	Pickmere ...	1	...	...	...	...	...	...	...	...	...	...
381	Plumley ...	2	...	...	...	...	...	...	...	...	1	1
407	Rostherne ...	5	...	...	...	...	...	...	...	...	5	...
150	Tabley Inferior ...	1	...	...	...	...	...	...	...	...	...	...
485	Tabley Superior ...	9	...	...	...	...	...	...	...	...	8	1
149	Tatton ...	1	...	...	...	...	...	...	...	...	1	...
190	Toft ...	3	...	...	...	...	...	...	...	...	...	1
3602	KNUTSFORD R.S.D.	44	...	...	...	1	...	...	1	...	26	7
1300	Mobberley ...	11	...	...	...	1	...	...	1	2	5	3
1845	Northenden ...	32	...	1	...	...	...	2	3	1	11	7
758	Northen Etchells ...	10	...	...	1	...	...	1	2	1	1	4
850	Styal ...	9	...	...	...	...	...	...	...	2	4	2
4863	WILMSLOW R.S.D.	62	...	1	1	1	...	3	6	6	21	16
22007	{ ENTIRE SANITARY DISTRICT. }	298	1	2	3	16	1	14	37	19	104	60



## INSPECTOR AND SURVEYOR'S REPORT.

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It is a pleasant duty to present my 12th Annual Report, though I can but touch briefly upon some of the many important matters which have received attention during the year.

**New Offices.**—Rooms have been acquired (on lease) at 7, Market Street, Altrincham; and their central situation has afforded easy access to many Ratepayers having business to transact with the Department. Since they were opened on January 14th, no less than 1,381 names of callers have been registered.

Systematic Inspections of the entire District have been carried out; often in conjunction with the Medical Officer of Health.

In July last the Council appointed an Assistant Inspector; and his time has been fully occupied.

217 Notices only have been issued, which is but a small proportion of the cases dealt with, and shews that the abatement of the majority of nuisances is affected by persuasion and without friction.

**Scavenging.**—The contracts for Hale, Dunham, and Timperley, have continued in force, and the contractors have carried out their duties satisfactorily. Early in February the Township of Northenden was formed into a scavenging area, and a contract arranged. The bulk of the work lies among the houses forming the village, about 300 in number, and a great improvement is visible. The cost in all the above Districts tends to increase, but this must be expected as population is increasing.

**Hale Moss.**—Owing to technical legal difficulties over which the various Councils concerned had no control, the acquisition of this waste land, which has so often been the site of very troublesome nuisances, was not actually completed by the close of the year. It is however practically arranged for, and the future management and control of this open space will be vested in the Hale Parish Council.

**Manure Deposits.**—Various complaints have been received about stench on Carrington Moss, at Sinderland Sidings, and at Baguley Station. Steps have been taken to minimise the nuisance.

**Sewage Schemes and Sewer Extensions.**—During 1897 I have been steadily occupied in preparing plans, sections, and estimates of proposed schemes for new Out-fall Sewers and



Works for the rapidly extending Townships of Hale, Dunham, and Timperley. Main Sewer extensions have been laid at Lamb Lane, Timperley, and Park Road, Hale, at an outlay of £240.

**New Buildings and Bye-laws.**—The Council has appointed a Building Committee to examine and report upon all plans for new buildings. This has been found to work very well. 313 sets of plans have been submitted and approved. Two prosecutions have been undertaken, with success. Most of the new buildings are in Hale, Timperley, Dunham, and Northenden; Hale alone having 80 houses now in course of erection. New Bye-laws have been framed and adopted, and are awaiting the sanction of the Local Government Board.

**Canal Boats.**—85 Canal Boats have been inspected, 37 of them being engaged in the manure traffic. The Boats were registered to carry 303 persons, and were found occupied by 163, viz.: 123 men, 31 women, and 9 children. Two of the latter were over school age, and were receiving efficient education. 13 minor infringements of the Act were noted, affecting 6 boats. They comprise 1 case of wrong certificate, 6 cases of bad repair, and in the same 6 boats also want of cleanliness. Notices were served; in 4 cases they have been complied with; and news of the other 2 is expected. The Manchester Corporation's Wharf at Carrington is periodically inspected, as it is on the Cheshire side of the Canal, though actually in Lancashire.

**Hackney Carriages.**—A new code of Bye-laws has been adopted. 30 Licenses have been granted for carriages and 35 for drivers. Powers to control the "cabmen's shelters" have been obtained, which will prevent them being put to an improper use.

Disinfection has been carried out in 39 cases, (7 after deaths from Phthisis), and when desired the bedding and clothing is treated at the Altrincham Hospital on payment of a fee. The Equifex Sprayer has been frequently used, but it is difficult to transport in a large country district on account of its weight.

J. Mc.D. McKENZIE.

*January, 1898.*



# Biddulph Urban District.

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## ANNUAL REPORT OF MEDICAL OFFICER OF HEALTH FOR 1897.

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Population at Census, 1891, 5,290.

Estimated Population in middle of 1897, 5,550.

Area in Acres, 5,057.

Birth Rate per 1,000 living, 31·2.

Death Rate per 1,000 living, 14·4.

Death Rate from Seven Principal Zymotic Diseases, 1·3.

Deaths under one year in proportion to 1,000 Births, 104.

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**Population.**—From the best information locally obtainable, the population at the middle of 1897 has been placed at 5,550, which is an increase of 50 only over 1896. As all “Rates” this year are low, there is no reason to think that this is too low an estimate.

**Twenty Years’ Records.**—(See General Tables). The Birth Rate cannot be ascertained before 1888. It has varied from 24·3 in that year, to 39·2 in 1891, its average for 9 years is 33·2, and the Rate for 1897 is 31·2. The Death Rate has been obtained approximately from the Congleton Rural District Reports for 1878, 1879, 1880, and 1881. Then there is a most unfortunate blank for 5 years, caused (I imagine) by the Local Board of that day not having the enterprise to order the printing of the Annual Reports, a most mistaken economy. From 1889 the Reports appear again in print, and incidentally mention the Rates in 1887 and 1888. The Death Rate has varied from 25·1 in 1879 to 12·0 in 1890. Three times (1878, 1879, 1893) it has exceeded 20·0; the average for the past 10 years is 15·5, whilst 1897 is only 14·4.

The Zymotic Death Rate is also known only from 1889, with the addition of 1887. It has varied from 0·2 (1887) to 3·3 (1895). The average is 1·6; whilst 1897 is only 1·3. Infantile Mortality is known only from 1889, which recorded the very bad figure of 210, (meaning that more than one-fifth of all children born during the year had died before they reached one year of age), and the average of 8 years being 156, with 111 as the best individual year, (1890), 1897 heads the list with 104.

Thus judged by any of the General Tables, progressive improvement can be claimed, and 1897 is about the best all-round year that has been recorded. The County position for 1896 was just about the middle of the 36 Urban Districts; I shall be surprised if 1897 does not shew a considerable improvement.

**Infectious Diseases.**—There have been notified during 1897, 11 cases of Scarlet Fever, 1 of Diphtheria, and 5 of Erysipelas. The case of Diphtheria was the only one that proved fatal. The cases of Erysipelas need no comment. The cases of Scarlet Fever commenced on September 9, with 1 case at Biddulph Moor, and from September 27 to October 23, 6 separate cases were notified in Bradley Green and Gillow Heath. On October 25 I devoted a day to investigating these cases. I found they were all connected with the Gillowshaw Brook School, and called and warned the Master to be careful to exclude all suspicious cases among the Scholars. In Gillow Heath I enquired into all cases of illness that I could hear of, and at last was rewarded by finding a family, with 4 children, two of them peeling freely, in whom the disease had not been recognised, treated, or notified. Having ordered their isolation at home, and having warned several of the neighbours, I hoped for improvement. Five days later I received Notifications of all four of these children, the other two having now contracted the disease, and a medical man having been called in. That was the end of the threatened epidemic. Not another case occurred.

The total number of Notifications, 17, compares favourably with the 55 of 1896; and 1 death as against 9. It is altogether a most satisfactory record.

**Isolation Hospital.**—This Hospital was built during a Small-pox epidemic, and has not been used since. On May 31 the Council decided that the Hospital should be used, at the discretion of the Medical Officer of Health, for future general cases; but up to the end of the year a few cases of Scarlet Fever were all that had occurred, and in none of these were the parents willing to allow the removal of the children. Everything, however, is ready for use, when required; and in this matter the District is better equipped than many of its neighbours.

**Births.**—(See Supp. Tab. III.) Total 173, which is 15 less than in 1896, and 35 less than in 1895. The Rate therefore falls to 31·2. The number of illegitimate births is only 3, compared with 11 in 1896.

**Deaths.**—Including 2 in the Leek Union Workhouse, 80; as against 90, 87 and 77 in the three years next preceding. The Rate is lowered to 14·4, compared with 16·4 and 16·8, for 1896 and 1895. But for a rather heavy mortality in the first Quarter, (which was not due to any one cause in particular), the figures would have been still better.

**Zymotic Diseases.**—The death from Diphtheria (F. 14) has already been alluded to. 4 deaths occurred from Whooping Cough, 1 in August, 2 in October, and 1 in November. Two were under 1 year of age, the others were each 2 years. 2 deaths occurred from Diarrhœa (F. 5 mos.) in March, and (F. 63) in September. The District may thus be considered to have entirely escaped the epidemic of infectious Diarrhœa which the hot weather of the summer brought as usual in its train, in so many other places. The Rate falls to 1·3, as compared with 2·5 and 3·3 in 1896 and 1895.

**Phthisis.**—9 deaths, (the same as last year): one at 65 years, the others all between 21 and 39 years. Disinfection carried out in all these cases.

**Influenza** is not mentioned.

**Injuries.**—Only 2 deaths. A man, 54 years of age, was killed by the fall of a railway waggon; and a man, 48 years of age, was killed by a fall from a cart.

**Inquests.**—In addition to the above, only one other inquest has been held. This was in September, (M. 50), death from Apoplexy.

**Uncertified Deaths.**—None recorded.

**Infantile Deaths.**—18, (compared with 26 and 30 in 1896 and 1895). This, in 173 births is equal to 104 per 1,000. This is a great improvement on the two preceding years. The causes of death are classified as follows:—Prematurity, Debility, and Malformation, 4; Convulsions, 3; Zymotic Diseases, 3; Bronchitis and Pneumonia, 3; Miscellaneous, 5; Total, 18. It will be noted that about one half of these were preventable. In many previous reports (1880, 1889, 1890), this subject has been discussed. This year we are in the exceptionally fortunate position of having a good return under this important heading.

**Slaughter Houses and Bake Houses.**—These have all received special attention, and have been fully reported on to the Council. Improvements are required in 2 cases, and are having attention.

**Scavenging.**—It will be remembered that an attempt was made in 1896, to obtain different contractors for the three



Wards, but that it was not successful, and that all three contracts went to the same man. In 1897 the Council insisted upon having them divided, considering the area too large for one man to undertake; and three contractors were secured. The result has not fulfilled our expectations, as instances of neglect have been frequent. At the December meeting of the Council it was resolved, on the advice of the Committee which had been considering the matter, to establish a Scavenging Department, and do the work entirely through the Council's own servants. This will commence in July, 1898. The Council is to be congratulated on this evidence of their desire to attend efficiently to the Sanitary needs of the District.

It appears probable, however, that this work will make additional demands upon the time of the Inspector, who will naturally be the responsible head of the Department; and I anticipate that it will be found necessary for him to reside in Bradley Green, and to devote his whole time to the duties of the office. I therefore recommend to the Council the consideration of the financial, and other points, involved in the question.

**Sewage Disposal.**—There is nothing to record in the way of work actually executed. The County Council has very strongly urged the necessity of new works, to prevent pollution of the stream flowing through the valley; and the Council has engaged an expert Engineer to report upon the question. There is no doubt that greater speed would have been made, but for the feeling of uncertainty which pervades the whole Country in regard to the Sewage problem. Many persons believe that we are on the brink of discoveries which may greatly simplify methods of treatment; and we are all (for instance) anxiously awaiting the result of the Enquiry which the Local Government Board held in November at Exeter into Mr. Cameron's system. Under these special circumstances, the Council is naturally averse to incurring a large expenditure on Sewage Works of any known pattern, when a very short time may give us a new method, both more efficient and also more economical.

**Public Water Supply.**—This remains good both in quantity and quality. New Works are in contemplation for a fresh supply for Biddulph Moor, a part of the District hitherto badly off for water.

There are no Common Lodging Houses, and no Canals in the District. A quantity of meat is sold by travelling butchers; this is watched as closely as possible.

**Inspector's Report.**—The Inspector reports that 21 houses have been disinfected after Infectious Diseases, including all the cases of death from Phthisis; that 7 bake houses and 4 slaughter houses have been periodically visited; 7 cases of



defective house-draining have been remedied; and 60 inspections made of ashpits and privies. I am quite certain that Mr. Worthington has not done himself justice in this Report; for the amount of work done is, to my certain knowledge, far larger than he claims credit for.

**T. W. H. GARSTANG,**

*M.R.C.S., D.P.H.*

*January 28th, 1898.*



[A] Table of **DEATHS** during the Year 1897, in the Biddulph Urban

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.  (Columns for Population and Births are in Table B.)  (a)	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.							(i)
	At all ages. (b)	Under 1 year. (c)	1 and under 5. (d)	5 and under 15. (e)	15 and under 25. (f)	25 and under 65. (g)	65 and upwards. (h)	
Urban District ... ..	78	18	6	2	4	29	19	{ Under 5 ... { 5 upwards ...

The subjoined numbers have also to be taken into

Deaths occurring outside the district among persons belonging thereto.	2	...	...	...	...	...	2	{ Under 5 ... { 5 upwards. ...
Deaths occurring within the district among persons not belonging thereto.	..	...	...	...	...	...	...	{ Under 5 ... { 5 upwards. ...

\* The heading of column 19 is left blank for the insertion of Influenza,

[B] Table of **POPULATION, BIRTHS, AND OF NEW CASES OF** of Health, during the Year 1897, in the Biddulph Urban District;

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.  (a)	POPULATION AT ALL AGES.			Aged under 5 or over 5.  (e)	NEW CASES OF KNOWLEDGE			
	Last Census. (b)	Estimated to middle of 1897. (c)	Registered Births. (d)		Small-pox.  1	Scarlatina.  2	Diphtheria.  3	Membranous Croup.  4
Biddulph (H.) ... ..	5290	5550	173	{ Under 5. { 5 upwds.	... ..	4 7	... 1	... ...

State here whether "Notification of Infectious Disease" is compulsory

*District, classified according to DISEASES, AGES, and LOCALITIES.*

MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																					
Small-pox.	Scarlatina.	Diphtheria.	Membranous Croup.	FEVERS.					Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneu- monia, & Pleurisy.	Heart Disease.	*	Injuries.	All Other Diseases.	Total.
				Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
...	...	...	...	...	...	...	...	...	...	...	...	4	1	...	...	6	...	...	...	13	24
...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	9	9	11	...	2	21	54

account in judging of the above records of mortality.

...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

or any other disease which it may be thought desirable to record.

**INFECTIOUS SICKNESS**, coming to the knowledge of the Medical Officer  
classified according to DISEASES, AGES, and LOCALITIES.

SICKNESS IN EACH LOCALITY COMING TO THE OF THE MEDICAL OFFICER OF HEALTH.										NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.
FEVERS.					Cholera.	Erysipelas.				
Typhus. 5	Enteric or Typhoid. 6	Continued 7	Relapsing 8	Puerperal. 9						
10	11	12	13							
..	..	..	..	..	..	5	..	..	..	
..	..	..	..	..	..	..	..	..	..	

in the District,--Yes. Since when?—1st January, 1890.

## SUPPLEMENTARY TABLE I.

Shewing Births, Birth Rate, Deaths, and General and Zymotic Death Rates, and compared with average of last 10 years ; and Deaths in Old Age and Infancy, and percentages of these to Total Deaths ; for the Year 1897.

TOTAL.			BIRTH RATE.		DEATH RATE.				DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.	
Births.	Deaths	Zymotic Deaths.	Average.	1897.	General.		Zymotic.		At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.
					Average.	1897.	Average.	1897.				
173	80	7	33.2	31.2	15.5	14.4	1.6	1.3	21	18	26	22

## SUPPLEMENTARY TABLE II.

Shewing Deaths, Death Rates, Deaths from Special Diseases, and Old Age and Infantile Deaths, in the Four Quarters of the Year, 1897.

QUARTER ENDING.		Total Deaths.	Rate.	DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.		Diphtheria.	Whooping Cough.	Diarrhoea.	ZYMOTIC DEATHS.		Phthisis.
				At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.				Total.	Rate.	
March	31 ...	26	19.0	7	6	27	23	...	...	1	1	0.9	2
June	30 ...	22	15.9	5	7	23	32	...	...	...	...	0.0	1
Sept.	30 ...	15	10.7	5	2	33	13	1	1	1	3	2.0	2
Dec.	31 ...	17	12.1	4	3	23	18	...	3	...	3	2.0	4

## SUPPLEMENTARY TABLE III.—BIRTHS.

		M.	F.	Total.	Rate.	Of which Illegitimate.		
						M.	F.	Total.
1st Quarter	...	21	26	47	34·3	...	...	...
2nd „	...	25	22	47	33·9	1	1	2.
3rd „	...	14	20	34	24·3	...	1	1
4th „	...	22	23	45	32·1	...	...	...
		82	91	173	31·2	1	2	3

## SUPPLEMENTARY TABLE IV.

Shewing position of Biddulph in the County in 1896, compared with 35 other Urban Districts.

STAFFORDSHIRE.	Best of 36 Urban Districts	Worst of 36 Urban Districts	Bid- dolph Figures.	Place of Bid- dolph in the List.
Birth Rate ... ..	47·6	25·3	34·1	21
Death Rate ... ..	10·6	22·5	16·3	15
Zymotic Death Rate ... ..	0·2	5·7	2·0	18
Infantile Mortality ... ..	97	235	138	11





# Knutsford Urban District.

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## ANNUAL REPORT OF MEDICAL OFFICER OF HEALTH FOR 1897.

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Population at Census, 1891, 4,663.

(4,266 exclusive of Workhouse and Gaol).

Estimated Population in middle of 1897, 5,247.

(4,650 exclusive of Workhouse and Gaol).

Area in Acres, 1,760.

Birth Rate per 1,000 living, 30·1.

Death Rate per 1,000 living, 16·6.

Death Rate from Seven Principal Zymotic Diseases, 1·9.

Deaths under one year in proportion to 1,000 Births, 171.

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**Population.**—In spite of all the care which I devoted to estimating accurately the population for 1896, an error crept in after all; and my first duty in this Report must be to make the necessary correction. The Assistant Overseer had very kindly given me the number of inhabited houses, as a basis of calculation; and he counted them from the Rate Book. Now it happens that there are in Knutsford a number of houses, the property of the Crown, which do not appear in the Rate Book; so that these must be added. In place of 4,310 which was taken as the population for 1896 (exclusive of Workhouse and Gaol), it would now appear that the number should more probably have been 4,600; and the various Rates for 1896 require correcting to the following figures: Birth Rate, 26·0; Death Rate, 16·5; Zymotic Death Rate, 1·4; and Infantile Mortality figure, 165. The population at the middle of 1897 is believed to have been about 4,650; with, in addition, an average of 368 inmates in the Gaol, and 229 in the Workhouse. (I have to express my thanks to the Chief Officers of those Institutions for their courtesy in furnishing me with this information). The grand total therefore is 5,247; but, as explained in my previous Reports, the populations of the Workhouse and Gaol, and the births and deaths

which take place there, have no connection with the Urban District of Knutsford, and its normal permanent residential population; and I therefore exclude them in all calculations.

**Twenty Years' Records.**—(See General Tables). In the case of this District it has not yet been possible to find the Birth Rate, Zymotic Death Rate, or Infantile Mortality, for the years before 1895, as the only figures available are those for the Knutsford Sub-District of the Bucklow Rural District, which includes 13 other Townships besides Knutsford. But as, all put together, they have only a population of about 3,600, compared to Knutsford, 4,650; and as the Rates would be heavier in the Urban Townships than in the Rural Townships; we shall perhaps not be far wrong if we take the Rates in the Tables for the Knutsford Rural District and add about 30 per cent to them for the Urban District. This result is, however, too speculative to be worth entering in the Tables. We are confined therefore to the General Death Rate, (in our survey), which it has been possible to extract, with some degree of accuracy, from the Bucklow Reports from 1878 to 1894. From this we see that the years 1884—1890 (see Table V.) were distinctly worse than the years 1878—1883; while the years 1891—1896 were better than either previous period. This is a satisfactory record, on the whole; but unfortunately 1897 is considerably worse than the average of the previous 19 years: the Death Rate having only been exceeded on six occasions, (1878—9, 1882—4—5—9). Details will be considered further on.

Following the arrangement of my two previous Reports, (1895 and 1896), it will be convenient to deal at once with the five main problems which have claimed the attention of the Council from the first moment of its existence.

(1) **Cemetery.**—It is perhaps not necessary to detail all the steps taken during the year with reference to various possible sites, which have now been abandoned. It will be enough to say that the Cemetery Committee, and the Council, have been very busy; and that at the moment of writing, negotiations are practically concluded, (subject of course to enquiry by, and sanction of, the Local Government Board), for the acquisition of a most excellent site at Tabley Hill. The ground is the highest in the neighbourhood, about 1 mile from the town, in the township of Tabley Superior; drainage will be easy; the soil is light and sandy; it is proposed to purchase about 5 acres; and the owner is willing to sell, on terms that have been agreed upon. The site is also the most picturesquely situated in the neighbourhood; and seems to be perfect. I have therefore every expectation that this problem will disappear from the list.

(2) **Sewage Disposal.**—Work has been in progress for some

time, to form a "sludge-well" near the engine house, to which the sludge deposited in the Tanks will, it is hoped, gravitate by means of special channels laid in the floors of the Tanks. The gas-engine, which has not been used since treatment by lime was abandoned, will be brought into use to work the pump. It is anticipated that the sludge will be removed more quickly, and at a great saving of manual labour, and furthermore that the Tanks will not require emptying nearly so often for purposes of cleaning, which will practically be equivalent to an increase of storage capacity. The Council does not think it desirable to divert the storm-water, as some of the sewers are short of fall, and it is feared they might tend to silt up. The question of filter area remains. Careful measurements shew that the present filter-area does not exceed 150 square yards. I consider this quite insufficient: and when the present work is finished, I advise that the filter-area be considerably enlarged. We should then turn out an effluent above suspicion; though at a somewhat heavy cost. It is quite possible that within a short time recent researches in sewage treatment will bear fruit in the shape of a simpler and less expensive system. Pending such expected developments, the Council will of course not embark on any large expenditure, but the work now being carried out, and that which I advise, will always be valuable, under any system.

(3) **Water Supply.**—The boring, commenced in 1896, has been continued by the Water Company in leisurely fashion. 330 feet had been reached at the end of 1896; 820 feet at the end of 1897; Sandstone was reached at 776 feet; and it is hoped that the supply of pure water will soon be an accomplished fact.

In connection with this question I will venture to set down my opinion that the work of water supply ought to be in the hands of the Council itself; and that the acquisition of the property of the Light and Water Company is not only a legitimate but a praiseworthy and desirable object for the Council to set itself to attain.

(4) **Isolation Hospital.**—The Bucklow Joint Hospital Board is now in actual existence. Hospital accommodation will be provided in course of time. Fortunately for this District, it has of late years had an almost entire absence of serious infectious disease; and it can afford to wait, with more equanimity than its neighbours, for the natural development of events.

(5) **Sanitary Conveniences and Scavenging.**—A beginning has been made of a much needed reform, indicated in my last Annual Report. A number of old Cesspools, of large size, have been abolished. What is known as the "Congleton Peat Pail System" has been introduced on a small scale, about 17 pails having been fixed. They have not yet fulfilled all expectations,

but this is because the fundamental principles of the system have not been adhered to with sufficient accuracy. It is intended to provide specially against a recurrence of this error, in the new contract which will shortly be entered into; and I then confidently anticipate complete satisfaction. Should this hope be realised, the pails will be introduced as opportunity offers, to replace midden-privies. Looking to the future, in this event, the question will soon arise whether it will not be necessary to establish a Scavenging Department, and do the work by the Council's own servants, instead of entrusting it to a Contractor. This is a very important matter in the development of the local government of the town, and should receive some preliminary consideration without delay.

**Prevention of Infectious Diseases.**—This has required practically no attention during 1897. A child suffering from Scarlet Fever was found playing in the street, in the third week of the disease, and is believed to have given rise to the only other case that occurred. The Council was advised to prosecute the parents, but declined to do so, as it was the first case of the kind; but instead, issued a handbill warning the public of the provisions and penalties of Section 126, Public Health Act, 1875.

The Medical Officer of Health had to deal with a Notification of Small Pox early in December. The fact that, as the case afterwards developed, it turned out to be only Measles, did not assist the M.O.H. in the steps which had to be taken in the first push of the emergency. The Inspector was called upon to find an empty isolated cottage for use as a Hospital, but promptly reported that there was no such building in existence. Arrangements were therefore made for the use of the Infectious Hospital at the Workhouse, which was opened and prepared. The Workhouse Ambulance was sent for the patient, a trained Nurse was telegraphed for from Manchester; and within six hours the case was removed, isolated, and in every way provided for. The total cost to the Council was £2 13s. 4d.; and this sum was voluntarily repaid by the employer of the young man (the patient), as a recognition of the prompt and effective steps which had been taken to prevent danger to the public.

**Infectious Diseases.**—The total Notifications for the year were 5 cases of Scarlet Fever and 3 of Erysipelas. 2 cases of Erysipelas occurred in the Workhouse; and 3 cases of Scarlet Fever were brought to the Workhouse Hospital for Isolation, from other Districts. The Urban District therefore really has a record of only 2 cases of Scarlet Fever, already alluded to, (children of 8 and 3 years, in October and November); and 1 case of Erysipelas. This will be bad to beat in any District of a similar size.



**Births.**—(See Supp. Table III). 2 Births which occurred in the Gaol are omitted. 9 Births occurred in the Workhouse, (7 illegitimate). 140 occurred in the Urban District, giving a Rate of 30·1, which is above the average of recent years.

**Deaths.**—103 registered, of which 77 belong to the District, giving a Rate of 16·6, compared with 14·1 the average of the ten years preceding. The number and Rate are the same as for 1896.

*Zymotic Deaths* are 1 from Measles and 8 from Diarrhœa. The former (M. 1) really died from intercurrent Pneumonia, in November; and is the only fatal case out of many hundreds which then filled the town; the latter cases occurred, 1 in June, 3 in August, 3 in September, and 1 in October, thus well illustrating the autumnal prevalence of Epidemic Diarrhœa. 7 were under 1 year of age; 1 had just reach 1 year.

Polluted soil, and midden-privies are, in my opinion, directly responsible for these deaths.

*Chest Affections* claim 20 deaths, (lungs 15, heart 5).

*Phthisis* occurs twice (having been entirely absent in 1896).

*Injuries.*—A man aged 25 was killed on the railway on May 1 and a woman aged 59 died (from burns) in the Workhouse in October. These both belong to Altrincham. Belonging to this District were a case of suicide by hanging (M. 62) in August; fall from a Swing-boat (F. 16) in September; and burns (F. 69) in July.

*Inquests*, in addition to the above, were held on 4 other cases in the Workhouse, which were all found to have occurred from natural causes.

*Uncertified.*—1 death only: in May, (M. 82), syncope.

Among "*All other Diseases*," (43 deaths), there are 3 cases of Cancer (M. 52; M. 62; F. 64): 1 of spasmodic Croup (F. 4); and 1 of Parturition (F. 22); but nothing else specially noteworthy.

*Infantile Mortality.*—The very large number of 24 children died under 1 year of age. Compared with 140 births, this gives a proportion of 171 to 1,000, which is distinctly a very bad return. The deaths are classified as follows:—Prematurity and Debility, 6; Convulsions, 4; Bronchitis and Pneumonia, 4; Diarrhœa, 7; Miscellaneous, 3. Thus about one-half were preventable, and need not have occurred. The figures for 1895 and 1896 were 92 and 165. These are the only 3 years of which we have accurate information; and are too few to serve as a basis for any general deductions. If children under 5 be taken, the number is 33; and of persons over 65, the number is 25; so that 58 deaths out of 77 occurred at the extremes of life.

**School Closure.**—In consequence of Measles, the Schools were closed as follows: Egerton Church of England, October

23 to December 4; Roman Catholic, October 30 to December 4; S. Cross Church of England, April 3 to 26; and November 15 to December 18.

**Cattle Fair.**—Among the minor benefits conferred upon the town by the Council, the removal of the intolerable nuisance caused by the half-yearly Cattle Fair being held in the main streets, must not be omitted. The site of the Fair is removed only a few yards, but it is now within the railings which bound the Market Green; and respectable persons are not now prevented from using the main streets for the greater part of a day each April and November.

**Slaughter Houses and Bake Houses.**—These have received special attention; and several defects have been remedied.

**Common Lodging Houses.**—An additional License has been granted, so that there are now 3. The two older licensed houses cannot, in my opinion, properly accommodate the full number for which they are licensed.

**Dairies and Cowsheds.**—The growing importance of attending to the physical well-being of the cattle which supply so large a part of our daily food, is being rapidly recognised in all progressive and intelligent communities. The Council is at present considering the issue of Regulations under the Order.

I append the Inspector's Report. By the accidental loss of a note-book Mr. Downes informs me he is prevented from giving more precise statistical information, which he regrets.

T. W. H. GARSTANG,

M.R.C.S., D.P.H.

*January 29th, 1898.*



## INSPECTOR'S REPORT.

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**Sewage Outfall.**—The alterations at the Tanks, reversing the fall by forming a channel down the centre of each, and conveying the sludge by iron pipes to a cylinder fixed near the engine house, will enable the work to be done at one pumping station, instead of at 3 or 4, as at present. I calculate that these alterations will be at least equal to one more Tank, in effect, as the sewage will be able to remain for precipitation at least 8 hours longer than at present; and I expect to be able, in consequence, to use a finer material for the filter.

**Scavenging** has been well attended to, throughout the District.

**Common Lodging Houses.**—These have been inspected several times, and have been kept in better condition than formerly.

**Slaughter Houses** have been continually inspected, and have all been kept very clean. Repairs to floors and drains have been required in 2 cases.

**Overcrowding.**—One case has been reported, and notice served.

WALTER DOWNES,

*Inspector.*

*December, 1897.*



[A] Table of **DEATHS** during the Year 1897, in the Knutsford Urban

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.  (Columns for Population and Births are in Table B.)  (a)	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.							(i)
	At all ages. (b)	Under 1 year. (c)	1 and under 5. (d)	5 and under 15. (e)	15 and under 25. (f)	25 and under 65. (g)	65 and upwards. (h)	
The District... ..	71	24	9	1	2	15	20	{ Under 5 ... 5 upwards ...
except								
H. M. Prison ... ..	2	...	...	...	1	1	...	{ Under 5 ... 5 upwards ...
and the								
Work House ... ..	30	2	...	...	...	10	18	{ Under 5 ... 5 upwards ...
TOTALS ... ..	103	26	9	1	3	26	38	{ Under 5 ... 5 upwards ...

The subjoined numbers have also to be taken into

Deaths occurring outside the district among persons belonging thereto.	...	...	...	...	...	...	...	{ Under 5 ... 5 upwards. ...
Deaths occurring within the district among persons not belonging thereto.	26	2	...	...	1	10	13	{ Under 5 ... 5 upwards. ...

\* The heading of column 19 is left blank for the insertion of Influenza,

[B] Table of **POPULATION, BIRTHS, AND OF NEW CASES OF**  
of Health, during the Year 1897, in the Knutsford Urban District;

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.  (a)	POPULATION AT ALL AGES.			Aged under 5 or over 5.  (e)	NEW CASES OF KNOWLEDGE			
	Last Census. (b)	Estimated to middle of 1897. (c)	Registered Births. (d)		Small-pox.  1	Scarlatina.  2	Diphtheria.  3	Membranous Group.  4
The District .. ...	4266	4650	140	{ Under 5. 5 upwds.	...	1	...	...
except								
H. M. Prison	177	368	2	{ Under 5. 5 upwds.	...	...	...	...
and the								
Work House ... ..	200	229	9	{ Under 5. 5 upwds.	...	3	...	...
TOTALS ... ..	4643	5247	151	{ Under 5. 5 upwds.	...	4	...	...

State here whether "Notification of Infectious Disease" is compulsory



*District, classified according to DISEASES, AGES, and LOCALITIES.*

MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																					
Small-pox. 1	Scarlatina. 2	Diphtheria. 3	Membranous Croup. 4	FEVERS.					Cholera. 10	Erysipelas. 11	Measles. 12	Whooping Cough. 13	Diarrhea and Dysentery. 14	Rheumatic Fever. 15	Phthisis. 16	Bronchitis, Pneu- monia, & Pleurisy. 17	Heart Disease. 18	* 19	Injuries. 20	All Other Diseases. 21	Total. 22
				Typhus. 5	Enteric or Typhoid. 6	Continued. 7	Relapsing. 8	Puerperal. 9													
...	...	...	...	...	...	...	...	...	...	...	1	...	8	...	...	7	...	...	...	17	33
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	5	5	...	3	24	38
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	2
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	3	2	...	2	16	28
...	...	...	...	...	...	...	...	...	...	...	1	...	9	...	...	7	...	...	...	18	35
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	9	7	...	5	41	68

account in judging of the above records of mortality.

...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	2	...	2	15	...	24

or any other disease which it may be thought desirable to record.

**INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officer**  
*classified according to DISEASES, AGES, and LOCALITIES.*

SICKNESS IN EACH LOCALITY COMING TO THE OF THE MEDICAL OFFICER OF HEALTH.										NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.
FEVERS.					Cholera. 10	Erysipelas. 11	12	13		
Typhus. 5	Enteric or Typhoid. 6	Continued 7	Relapsing 8	Puerperal. 9						
...	...	...	...	...	...	...	...	...	NO ISOLATION HOSPITAL.	
...	...	...	...	...	...	1	...	...		
...	...	...	...	...	...	...	...	...		
...	...	...	...	...	...	...	...	...		
...	...	...	...	...	...	2	...	...		
...	...	...	...	...	...	...	...	...		
...	...	...	...	...	...	3	...	...		

in the District,--Yes.

Since when?--1st January, 1890.



## SUPPLEMENTARY TABLE I.

Shewing Births, Birth Rate, Deaths, and General and Zymotic Death Rates, and compared with average of last 10 years; and Deaths in Old Age and Infancy, and percentages of these to Total Deaths; for the Year 1897.

TOTAL.			BIRTH RATE.		DEATH RATE.				DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.	
Births.	Deaths	Zymotic Deaths.	Average.	1897.	General.		Zymotic.		At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.
					Average.	1897.	Average.	1897.				
140	77	9	29.3	30.1	14.1	16.6	0.9	1.9	25	24	32	31

## SUPPLEMENTARY TABLE II.

Shewing Deaths, Death Rates, Deaths from Special Diseases, and Old Age and Infantile Deaths, in the Four Quarters of the Year, 1897.

QUARTER ENDING.			Total Deaths.	Rate.	DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.		Measles.	Diarrhoea.	ZYMOTIC DEATHS.		Phthisis.
					At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.			Total.	Rate.	
March	31	...	22	19.2	6	7	27	32	...	...	...	0.0	1
June	30	...	19	16.4	5	4	26	21	...	1	1	0.8	1
Sept.	30	...	23	19.6	8	9	35	39	...	6	6	5.1	...
Dec.	31	...	13	11.1	6	4	46	31	1	1	2	1.7	...

## SUPPLEMENTARY TABLE III.—BIRTHS.

		M.	F.	Total.	Rate.	Of which Illegit.			Additional in Workhouse.					
									Total.			Illegit.		
1st Quarter	...	20	22	42	36.6	2	1	3	1	...	1	1	...	1
2nd	„	19	15	34	29.3	1	1	2	3	3	6	3	2	5
3rd	„	14	19	33	28.2	1	3	4	...	1	1	...	1	1
4th	„	17	14	31	26.4	...	...	...	1	...	1	...	...	...
		70	70	140	30.1	4	5	9	5	4	9	4	3	7

## SUPPLEMENTARY TABLE IV.

Shewing position of Knutsford in the County in 1896, compared with 35 other Urban Districts.

	Best of 36 Urban Districts	Worst of 36 Urban Districts	Knutsford Figures.	Place of Knutsford in the List.
Birth Rate ... ..	38.6	14.8	26.0	17
Death Rate ... ..	8.2	23.4	16.5	25
Zymotic Death Rate ... ..	0.0	4.8	1.4	17
Infantile Mortality ... ..	37	265	165	28



# Winsford Urban District.

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## ANNUAL REPORT OF MEDICAL OFFICER OF HEALTH FOR 1897.

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Population at Census, 1891, 10,440.

Estimated Population in middle of 1897, 10,655.

Area in Acres, 5,780.

Birth Rate per 1,000 living, 33·6.

Death Rate per 1,000 living, 16·7.

Death Rate from Seven Principal Zymotic Diseases, 4·2.

Deaths under one year in proportion to 1,000 Births, 184.

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**Population.**—From the best information locally obtainable, the population in the middle of 1897 has been placed at 10,655, (viz.: Over, 7,050; and Wharton 3,605); being an increase of 50 only over 1896, and of 215 only over 1891. It certainly seems as if this were an under-estimate; and the general popular belief is that the population is between 11,000 and 12,000; but my information is derived from official sources, and I am therefore compelled to accept it as correct.

**Twenty Years' Records.**—(See General Tables). The Birth Rate is always high, having three times been above 40, and never below 30. The averages shew it to have been very steady for the last 13 years, but distinctly lower than in the first 6 years. This year's is below the average, and indeed there has only been a lower figure three times (1889, 1890, 1892). The Death Rate is higher in the third period than in the second, but both are lower than the first. This year is just the average of the last 13 years. The worst Rate recorded was 27·5 in 1878; the best 13·2 in 1888. Eight times it has been better than 1897. The Zymotic Death Rate shews, on the average, a steady and marked diminution. 1897, however, is the worst year recorded, save only 1878. The Infantile Mortality, however, is larger in the last six years than in the previous thirteen; and 1897 is the worst ever recorded. The explanation will be given later on.

**Prevention of Infectious Disease.**—The efforts of your Officers have been unremitting in their endeavours to prevent the spread of the Infectious Diseases Notified. In consequence there have only been 47 cases, compared with 197 in 1896. And what is still better, there was not a single death among them.

**Isolation Hospital.**—This Hospital is a small wooden building, containing one Ward, capable of receiving 2 adult patients, if of the same sex, and suffering from the same disease. It was erected in April, 1893, and received a case of Small Pox. It has not been used since, until this year. The Council resolved in May that the Hospital should be completed in its fittings, so as to be available at any time. Nothing however was actually done until October, when some children were admitted, in an endeavour to check a Scarlet Fever epidemic at Meadow Bank. When occupied, and a trained Nurse in charge, its deficiencies rapidly became apparent. It was found necessary to build a wash-house and other conveniences, at a cost of about £20. Completion of furniture, etc., came to another £20. Water supply, by laying a branch from the Town main, cost another £15. For this expenditure, the Council may feel confident that the Hospital is now as completely equipped as it is possible for it to be. The cost of nursing and maintaining the five patients for nearly 12 weeks amounted to about £25, and when the payment to the Medical Attendant is added, the total cost will be ascertained. The Hospital was closed on December 31st.

While on this subject it must be recorded that the County Council is again pressing for a Joint Scheme, as last year; but the position does not seem to have altered since the negotiations failed in 1896, and the chance of a better result at the present time does not seem very bright.

**Infectious Diseases.**—The 47 cases Notified include no less than 19 of Erysipelas, which are not worth paying for, or discussing; so that really only 28 cases of the graver diseases occurred. Of Puerperal Fever there were no cases at all. Of Enteric Fever there was 1 case, in October, (M. 32). There were 2 cases of Diphtheria, unconnected, a child aged 4 in March, and a child aged 9 in April. The whole of the remaining cases were Scarlet Fever, 16 in Over, and 9 in Wharton. The Wharton cases all occurred in the first five months of the year, and were probably connected, (no less than 6, for instance, were in Station Road, in 2 houses). The first of the Over cases occurred in June, in the neighbourhood of Meadow Bank, and was followed by 12 more, in the same part of the District; the remaining 3 being 1 in High Street, and 2 in Chapel Street. The Meadow Bank cases occurred as follows: 1 on June 15, 1 on August 5, 1 on October 9, 1 on October 14, 2 on October



21, 1 on October 25, 1 on October 28, 1 on October 30, 1 on November 1, 1 on November 2, 1 on November 10, and 1 on November 17. I give these dates, as there is no doubt that all the cases can be traced to the first one, and also no doubt that the School was the place where the infection was communicated. The area of the outbreak being well defined, and quite separate from the main part of the town, it was an unusually favourable case for investigation. The third case was taken to the Isolation Hospital on October 11th; 2 cases on the 21st; 1 on the 26th; and 1 on November 3rd. (They were discharged at intervals during December). I visited the locality repeatedly, but for a long time no clue could be found. By November 4th however I had become convinced that the School was an important factor, and on that day I made personally a careful examination of the scholars. I excluded one boy whose history was suspicious; and I drew the Master's attention to four girls whose appearance (including the state of their throats) was also suspicious. Two more cases occurred after this, on which I ordered the exclusion of the four girls also; and we had no further cases afterwards.

**Births.**—(Supp. Tab. III.) Total 358, being 25 less than in 1896. The Rate is 2·5 below 1896, and 0·8 below the average of the last 10 years.

**Deaths.**—(Supp. Tab. II.) Total 178, being 20 more than 1896. The Rate is 16·7, or 1·8 higher than in 1896; and 0·3 higher than the average. The heaviest mortality occurred in the Second Quarter.

*Influenza* is only mentioned once; and then complicated with Pneumonia; (F. 29) in April.

*Phthisis.*—10 deaths. Of these 9 were Females. Over 7, Wharton 3. Ages, 14 to 77. Rate, 0·9. But there were also 5 deaths of children from Tuberculous Diseases; so it is a question whether the total should not be given as 15, and the Rate as 1·4. Disinfection was carried out in nearly all these cases.

*Injuries.*—3 cases. In January an unknown woman was found drowned; in February a man of 51 committed suicide by cutting his throat; and in March a boy of 6 was killed by a fall.

*Inquest.*—In only one other case was an Inquest held; this was a man of 65, in April, and the case of death was not ascertained.

*Uncertified.*—1 case, a man of 45, in November; death due to Heart Disease.

*All other Diseases.*—Included here are 3 cases of Cancer, (F. 64; M. 62; M. 28); 1 of Melancholia, (F. 29); 1 of Ecthyma, (F. 10 mos.); and 1 from the accidents of Parturition, (F. 23); but there is nothing else worth special mention.

*Zymotic Deaths.*—I now reach one of the most important, as

well as one of the most unpleasant subjects dealt with in this Report. Though, as said above, the District has not a single death during the year from any of the graver infectious diseases, yet no less than 33 lives have been lost from Whooping Cough, (everyone children under 5 years of age), and Diarrhœa and Measles increase the total to 45 (still all under 5); which is exactly one-fourth of the whole number of deaths during the year, and equal to the Rate of 4.2; the average Rate for 10 years past being 1.6.

1 Death from Measles occurred in December. The Diarrhœa Deaths were January, 1; May, 1; August, 4; September, 1; October, 3; December, 1. These illustrate the usual rules of the prevalence of Diarrhœa in the Autumn, after a hot summer. The Whooping Cough Deaths were March, 1; April, 12; May, 11; June, 3; August, 2; September, 3; October, 1.

This frightful mortality from diseases which many people treat very lightly as natural every-day occurrences, will place an indelible mark upon the Report for 1897. The Sanitary Authority is not responsible for the ignorance and carelessness of the mothers in the poorer classes; and yet it would seem to be the only body interested in the matter; and I do urge the Council to consider very seriously whether some steps cannot be taken to prevent or diminish this most unhappy, because quite preventable, waste of infant human life.

*Infantile Mortality.*—Many of the cases, already alluded to, occur again in this paragraph. 184 deaths before reaching 1 year of age, out of every 1,000 births. Very nearly one-fifth of all the children born into the District, are hurried out of it again with hardly a chance of making any struggle for existence. An absolute and unnecessary waste of life goes on year by year, in a manner which is frightful and appalling, when the statistics are (as here) collected and examined. The 67 deaths under 1 year of age are more than one-third of all the deaths in the District. They are classified as follows: Prematurity and Debility, 14; Convulsions, 3; Bronchitis and Pneumonia, 15; Zymotic Diseases, 25; Tuberculous Diseases, 3; Miscellaneous, 7. It can be seen at a glance that at least one-half of these could have been saved.

**Sewage Works.**—Work has proceeded steadily during the year, on the old lines. Many circumstances combine to make the filter-beds unique; such as, subsidence of the river bed, the enormous volume of water in the “flash” (lake) which has formed, the fact that cinders are a waste product in the chief industry of the town (salt-making), the further fact that they are taken to the filters in boat loads of 60 tons each, and that there is no carting, and finally the fact that the effluent makes its way into the river, by thousands of dribblets *below the surface*,

so that the effluent cannot be obtained for examination. There are no complaints of the system, which is generally regarded as satisfactory. I am certain, however, that it might be greatly increased in efficiency, without any extra cost, by alternating the use of the filters, in the light of the most recent discoveries, instead of the present rule of thumb, which, in my opinion, does not produce as good results as it is supposed to do.

**Scavenging.**—Nothing has been done as yet to remedy the danger of soil-pollution, (pointed out in my last Annual Report,) from ill-constructed privies and cess-pools. These have all been cleaned out three times during the year; but the whole system is bad to the roots; and to be condemned. Some more modern and hygienic system is required. Several Districts are trying the Congleton Peat Pail System; and, as far as I can judge, with every prospect of success. I again bring this matter to the notice of the Council as urgent, and recommend it for very careful consideration.

**Unsound Meat.**—The Inspector continues his valuable work in this direction. On January 28th a carcass of beef was seized in a Slaughter House, and after the usual legal proceedings the Occupier was fined £20. On July 23rd about 200 lbs. of beef was seized at Market Place, and the offender was fined £20 and costs. On September 8th a carcass of beef was seized on a farm, where the cow had been slaughtered. A penalty of £5 was imposed upon the farmer for selling, and of £2 upon a butcher for buying, this meat for human consumption.

In consequence of this watchful care the Inspector is able to report that the Meat brought into the Market in 1897 has been of better quality than ever before.

**School Closure.**—No Schools have been closed during the year.

**Slaughter Houses and Bake Houses.**—These have received a special inspection by the Medical Officer of Health, in addition to the Inspector's constant supervision.

**Water Analysis.**—The Council has sent several samples to the County Analyst, but I cannot report the results, as the papers have not passed through my hands.

**T. W. H. GARSTANG,**

*M.R.C.S., D.P.H.*

*February 1st, 1898.*

[A] Table of **DEATHS** during the Year 1897, in the Winsford Urban

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.  (Columns for Population and Births are in Table B.)  (a)	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.							(i)
	At all ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
(b)	(c)	(d)	(e)	(f)	(g)	(h)		
Townships of								
Over ... ..	112	41	16	5	4	24	22	{ Under 5 ... 5 upwards ...
Wharton ... ..	65	26	11	3	6	11	8	{ Under 5 ... 5 upwards ...
TOTALS ... ..	177	67	27	8	10	35	30	{ Under 5 ... 5 upwards ...

The subjoined numbers have also to be taken into

Deaths occurring outside the district among persons belonging thereto.	2	...	...	...	...	1	1	{ Under 5 ... 5 upwards. ...
Deaths occurring within the district among persons not belonging thereto.	1	...	...	...	...	1	...	{ Under 5 ... 5 upwards. ...

\* The heading of column 19 is left blank for the insertion of Influenza,

[B] Table of **POPULATION, BIRTHS, AND OF NEW CASES OF** of Health, during the Year 1897, in the Winsford Urban District;

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.  (a)	POPULATION AT ALL AGES.			Aged under 5 or over 5.	NEW CASES OF KNOWLEDGE			
	Last Census.	Estimated to middle of 1897.	Registered Births.		Small-pox.	Scarlatina.	Diphtheria.	Membranous Croup.
(b)	(c)	(d)	(e)		1	2	3	4
Over ... ..	10440	10655	236	{ Under 5. 5 upwds.	...	3	...	1
Wharton (H.) ..			122	{ Under 5. 5 upwds.	...	3	...	...
TOTALS ... ..	10440	10655	358	{ Under 5. 5 upwds.	...	6	...	1

State here whether "Notification of Infectious Disease" is compulsory in the District,--Yes.



## District, classified according to DISEASES, AGES, and LOCALITIES.

MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																					
Small-pox. 1	Scarlatina. 2	Diphtheria. 3	Membranous Croup. 4	FEVERS.					Cholera. 10	Erysipelas. 11	Measles. 12	Whooping Cough. 13	Diarrhoea and Dysentery. 14	Rheumatic Fever. Phthisis. 15	16	Bronchitis, Pneu- monia, & Pleurisy. 17	Heart Disease. 18	Influenza. 19	Injuries. 20	All Other Diseases. 21	Total. 22
				Typhus. 5	Enteric or Typhoid. 6	Continued. 7	Relapsing. 8	Puerperal. 9													
...	...	...	...	...	...	...	...	...	...	...	1	24	9	...	...	6	...	...	...	17	57
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	3	12	...	1	31	55
...	...	...	...	...	...	...	...	...	...	...	...	9	2	...	...	12	...	...	...	14	37
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	4	6	1	2	11	28
...	...	...	...	...	...	...	...	...	...	...	1	33	11	...	...	18	...	...	...	31	94
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	11	7	18	1	3	42	83

account in judging of the above records of mortality.

...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1

or any other disease which it may be thought desirable to record.

**INFECTIOUS SICKNESS**, coming to the knowledge of the Medical Officer  
classified according to DISEASES, AGES, and LOCALITIES.

SICKNESS IN EACH LOCALITY COMING TO THE OF THE MEDICAL OFFICER OF HEALTH.										NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.
FEVERS.					Cholera. 10	Erysipelas. 11	12	13		
Typhus. 5	Enteric or Typhoid. 6	Continued 7	Relapsing 8	Puerperal. 9						
...	...	...	...	...	...	2	...	...	Scarlatina, 5.	
...	...	...	...	...	...	12	...	...		
...	...	...	...	...	...	1	...	...		
...	I	...	...	...	...	4	...	...		
...	...	...	...	...	...	3	...	...		
...	I	...	...	...	...	16	...	...		

Since when?—1st January, 1890. (H) Small Wooden Building built for Small-pox only.



## SUPPLEMENTARY TABLE I.

Shewing Births, Birth Rate, Deaths, and General and Zymotic Death Rates, and compared with average of last 10 years ; and Deaths in Old Age and Infancy, and percentages of these to Total Deaths ; for the Year 1897.

TOTAL.			BIRTH RATE.		DEATH RATE.				DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.	
Births.	Deaths	Zymotic Deaths.	Average.	1897.	General.		Zymotic.		At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.
					Average.	1897.	Average.	1897.				
358	178	45	34.4	33.6	16.4	16.7	1.6	4.2	31	67	17	38

## SUPPLEMENTARY TABLE II.

Shewing Deaths, Death Rates, Deaths from Special Diseases, and Old Age and Infantile Deaths, in the Four Quarters of the Year, 1897.

QUARTER ENDING.			Total Deaths.	Rate.	DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.		Measles.	Whooping Cough.		Diarrhoea.	ZYMOTIC DEATHS.		Phthisis.
					At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.					Total.	Rate.	
March	31	...	46	17.3	12	15	26	33	...	1	2	3	1.1	4	
June	30	...	66	24.9	6	28	9	42	...	26	1	27	10.2	1	
Sept.	30	...	33	12.3	8	13	24	39	...	5	4	9	3.3	2	
Dec.	31	...	33	12.3	5	10	15	30	1	1	4	6	2.2	3	

## SUPPLEMENTARY TABLE III.—BIRTHS.

Total Number 358. Rate 33·6.

	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
	Total.	Of which Illegitimate.	Total.	Of which Illegitimate.	Total.	Of which Illegitimate.	Total.	Of which Illegitimate.	Total.	Of which Illegitimate.
Over ...	50	6	74	2	58	2	54	2	236	12
Wharton ...	31	2	43	3	29	1	19	2	122	8
Total ...	81	8	117	5	87	3	73	4	358	20

The Quarterly Rates are as follows :

Over	28·0,	42·1,	31·2,	29·1.
Wharton	39·1,	47·8,	31·9,	20·9.

The Annual Rate for Over is 33·4 ; for Wharton 33·8.

## SUPPLEMENTARY TABLE IV.

Shewing position of Winsford in the County in 1896, compared with 35 other Urban Districts.

	Best of 36 Urban Districts	Worst of 36 Urban Districts	Wins- ford Figures.	Place of Wins- ford in the List.
Birth Rate ... ..	38·6	14·8	36·1	5
Death Rate ... ..	8·2	23·4	14·9	20
Zymotic Death Rate ... ..	0·0	4·8	1·8	23
Infantile Mortality ... ..	37	265	130	17

## INSPECTOR'S REPORT.

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The sewers in the District have been regularly cleaned and flushed. The Sewage beds have been cleansed and disinfected. A number of gentlemen from other Districts have visited Winsford to see them, and to make enquiries concerning their construction.

The privies are emptied three times a year, and the contents removed to the farms of the Contractors for use as manure, after being mixed with lime, chaff, and farm-yard refuse. House ashes and refuse are removed once a month, and taken to a tip.

During the epidemic of Whooping Cough a leaflet, prepared by the Medical Officer of Health, was widely distributed, and seemed to have a good effect in diminishing the number of affected children allowed to run loose in the streets.

The Common Lodging Houses have been constantly inspected, and are fairly conducted.

The Sanitary Arrangements of the District appear to be good.

RALPH OAKES,

*Inspector.*

*January, 1898.*



# Northwich Rural District.

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## ANNUAL REPORT OF MEDICAL OFFICER OF HEALTH FOR 1897.

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Population at Census, 1891, 20,909.

Estimated Population in middle of 1897, 22,768.

Area in Acres, 54,301.

Birth Rate per 1,000 living, 34·3.

Death Rate per 1,000 living, 16·6.

Death Rate from Seven Principal Zymotic Diseases, 2·3.

Deaths under one year in proportion to 1,000 Births, 144.

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**Population.**—Every precaution has been taken, as detailed at length last year, (A. R. 1896), to arrive at a correct estimate. Weaverham Sub-District is advanced from 8,561 to 8,671; Northwich Sub-District from 8,092 to 8,174; Over Sub-District from 3,089 to 3,113; and Middlewich Sub-District from 2,759 to 2,810. The Total thus becomes 22,768 in place of 22,501. If there is any error, I fancy it will be found that it is an underestimate. I hardly think enough allowance has been made for the expansion of Barnton, (for instance), or Lostock Gralam, or Rudheath; thus affecting the totals of Weaverham, Northwich, and Middlewich Sub-Districts respectively.

**Twenty Years' Work.**—(See General Tables I., II., III., IV. and V.)

**Birth Rate.**—High in each Sub-District at every period. Varies from 41·5 (Over 1878) to 22·6 (Middlewich 1881). The Averages shew a slight decline in the middle period, now being

made up. 1897 is about the same as, or very slightly better than, the average of the preceding 6 years.

**Death Rate.**—High for a Rural District. Varies from 10·8 (Middlewich 1881) to 24·0 (Over 1879). The averages shew a slight decline over the whole period, though not so much as might have been hoped and expected; and the last period is not so good as the middle one. 1897 is slightly worse than the average of the last period.

**Zymotic Death Rate.**—Very variable. Lowest 0·4 (whole District, 1891); highest, 4·0 (Northwich Sub-District, 1897). The averages shew distinct, though slight, progressive improvement; but 1897 is an exceptionally bad year, and worse than any recent averages.

**Infantile Mortality Figure.**—Varies from 82 (Middlewich Sub-District, 1895), to 203 (Northwich Sub-District, 1893). The averages here shew deterioration rather than improvement. 1897 also is a bad year, and worse than the averages. The reasons for this will be discussed later on.

**Prevention of Infectious Disease.**—Great efforts have been made by the Inspector and his assistant to carry out my instructions, (see paragraph “Value of Notification” in the preliminary chapter); and I once more gladly record my appreciation of Mr. Bennett’s work. But it is impossible to have the work done to my complete satisfaction under existing conditions. The area is a large one; the number of cases Notified is also large; a minimum of 2 visits to each case (which is not nearly enough) would alone provide one journey for each working day in the year. On October 1, 1897, I made the following Report: “I must now draw the attention of the Council to the insufficiency of the Staff in the Sanitary Department. The ‘Inspector’ is generally occupied with duties as ‘Surveyor’; the ‘Assistant Inspector’ as ‘Clerk of the Works’; and it frequently happens that delay takes place in the visiting of new cases Notified, and it is impossible to keep proper supervision over old cases owing to there being no Officer in the Department at liberty and available. I must ask the Council either to re-arrange the duties of the existing Officers, or to provide an additional Officer, as I must have some-one available to supervise Notified infectious cases as his first duty, if I am to fulfil my duty to the Council and to the public, properly.” The Council thereupon decided to cease employing the Assistant Inspector as Clerk of Works, except in some specified instances; and as only 19 cases were Notified in the last Quarter of the Year, we have got along all right. But I am bound to repeat emphatically my warning (as above) that if we ever find again the figures of 1896, (270 cases), we shall be utterly unable (as we were then) to deal with them



so as to exercise a proper control over the epidemics. Possibly the temporary employment of an additional Inspector at times of emergency might meet the difficulty to some extent; but it must be remembered that efficient Inspectors cannot be picked up at a moment's notice ready made, but require training and experience.

**Isolation Hospital.**—The Marbury Hospital has been used during 1897 for 6 cases, being open for 42 days in the 1st Quarter for a case of Enteric Fever: and for 105 days during the last four months for 5 cases of Scarlet Fever; at a total cost of about £74. The case of Enteric Fever (M. 21) was removed from a crowded house in Wincham, where the man was a lodger. The patient died from Tuberculous Disease two days after discharge from Hospital. A young married woman (19) was next admitted with Scarlet Fever in September from a crowded house in the same Township. Her presence enabled us to persuade the parents of a child aged  $2\frac{1}{2}$  to allow it to be removed to Hospital from Winnington at the beginning of October. This Township suffered so much in 1896 from Scarlet Fever that a great effort was made to keep it clear on this occasion. There had been no case for over 2 months, and 2 further cases (in one house, ages 5 and 4) which occurred in November were also removed to Hospital, and no further cases occurred. The other case, a child of  $2\frac{1}{2}$ , was removed from Rudheath in October, owing to the mother having been confined again only a few days previously. Three weeks afterwards it was found that the mother was "peeling," and must have had the disease before the child. (Another case in Rudheath was traced to infection from the mother, but fortunately it went no further). All these cases did well, and recovered from the primary illness, but on November 12th I reported that the two children admitted in October were seriously ill, one with Pneumonia and one with Bronchitis, and although they ultimately recovered, I had to report on December 10th that the child from Rudheath had also had Pneumonia, and had died in the Hospital on November 27th. In consequence of this I advised an alteration in the nursing arrangements; which I have reason to believe will be carried out early in the new year.

It must not be supposed that these were all the cases which ought to have gone to Hospital. The Council has given me to understand so distinctly that the Hospital is not to be used except in the very most urgent cases, that I have actually refused applications for admission (as in 2 cases at Leftwich Green, March 22nd, reported to the Council April 2nd), and in other cases have abstained from suggesting removal when I would have liked to do so. I have always borne in mind that on February 5th it was only by the casting vote of the Chairman,

after an equal vote, that I was allowed to send patients into the Hospital at all; and I do not think I can be accused of violating the understanding then arrived at. I always endeavour loyally to obey the orders of the Council, even when they do not coincide with my own views. It is my duty to place on record the fact that an order was given; the responsibility for its results does not then rest upon my shoulders.

While on this subject it is briefly to be noted that the County Council is still urging that more complete Isolation Hospital accommodation should be provided by a Joint Scheme for the Four Authorities within the area of the Northwich Union. At the date when this Report closes, December 31st, 1897, the question remains much in the position it did twelve months ago (A.R. 1896). It has long been a matter pressed upon the attention of the Council in successive Annual Reports, more particularly in those for 1879, 1880, 1881, 1882, 1886, and 1887. The various expedients resorted to, from time to time, as emergencies arose, are interesting reading. In spite of these difficulties Dr. Fox reported in 1887 that after ten years' experience, he considered a permanent Hospital unnecessary. The subject then drops from the Reports until 1894 when it is very briefly recorded that "the Authority made themselves possessors of an Isolation Hospital." Had Dr. Fox lived a few years longer, I have no doubt his opinion on this subject would have undergone development, just as it can be shown to have done on other subjects by reference to the series of his Reports. The fact should never be overlooked that we are living in an age of very rapid Sanitary discovery and progress. The better educated a Sanitary Officer is, the more readily will he recognise and admit this condition of development, and will know that next year's work must not be limited by last year's knowledge. It is, however, often difficult to impress this point upon a Council consisting of laymen, which prefers to run in a known groove, and dislikes new departures.

**Infectious Diseases.**—The number of cases Notified during 1897 is 162, (270 in 1896, 129 in 1895, 192 in 1894, 257 in 1893). Of these 128 were Scarlet Fever, 6 Diphtheria, 12 Enteric Fever, 5 Puerperal Fever, and 11 Erysipelas. The Seasonal occurrence was: January, 26; February, 19; March 19; April, 20; May, 10; June, 13; July, 13; August, 10; September, 13; October, 8; November, 7; December, 4. Thus the First Quarter has 64; the Second Quarter, 43; the Third Quarter, 36; the Fourth Quarter, 19. The localities are given in Supplementary Table I. From this it will be apparent at once that no disease has assumed an epidemic or dangerous character, except Scarlet Fever. The Townships with most cases of Scarlet Fever are Barnton 21, Davenham 19,

Winnington 18, Rudheath 15, Marston 10, Leftwich 9, Wincham 9, and Lostock 7. Now there is one point in common to all these Townships, viz: that they all closely surround, and most of them actually adjoin, the Urban District of Northwich. They account for 108 cases out of a total 128. The inference is plain. The same thing was observed also last year.

*Erysipelas*.—3 cases occurred in Moulton, 2 in Weaverham, 1 each in Barnton, Darnhall, Davenham, Lostock, Marston, and Rudheath, which require no detailed reference. The Barnton case (M. 59) was fatal, from (Edema of the Glottis).

*Puerperal Fever*.—2 cases in Davenham, in January and June; 1 case each in Hartford, Marston, and Weaverham. The Hartford case was fatal.

*Diphtheria*.—2 cases in Barnton, 1 each in Anderton, Davenham, Lostock, and Winnington. 1 case at Barnton (F. 1½), and 1 at Anderton (F. 3), were fatal. The cases were widely separated both in place and time, occurring in the months of January, March, June, August, September, and December, one in each.

*Enteric Fever*.—2 cases each in Barnton, Marston, and Davenham; 1 each in Comberbatch, Crowton, Moulton, Weaverham, Wincham, and Winnington. 1 case in Barnton (M. 41) and 1 in Crowton (M. 18) were fatal. 2 cases occurred in January, 1 in April, 2 in May, 1 in August, 2 in September, 1 in October, 1 in November, and 2 (in 1 house) in December. The cases, with two exceptions, appear to be unconnected with each other. The causes were often obscure. The absence of the disease this year from Acton is a feature to be noticed.

*Scarlet Fever*.—To the number of cases already enumerated, it only remains to add 5 each in Kinderton and Little Leigh, 3 in Acton, 2 in Anderton, and 1 each in Crowton, Cuddington, Weaverham, Allostock, and Darnhall. The distribution of the disease by time was: January, 22; February, 17; March, 16; April, 18; May, 5; June, 10; July, 12; August, 7; September, 10; October, 7; November, 4; December, 0; or, by Quarters, 55, 33, 29, 11, respectively. The deaths were 9, and include one man of 36 years, the remainder being children under 5 years. The age distribution of the cases was: 3 over 40; 2 between 30 and 40; 6 between 20 and 30; 21 between 10 and 20; 42 between 5 and 10; and 54 under 5 years. It seems unnecessary to dwell at any greater length on this subject.

**School Closure.**—The Barnton Schools were kept closed after the Christmas Holidays till February 22nd. This was the last of the 1896 Epidemic of Scarlet Fever. The Marston School was closed from September 13 to October 2 on account of Measles.



**Births.**—(Supplementary Table III.) Read horizontally this Table gives the Quarterly and Annual Totals and Rates for each Registration Sub-District, and for the whole Rural District. Read vertically, the Totals and Rates for each Quarter and for the whole year are compared together. The labour involved in preparing this apparently simple Table is enormous. I continue to give it because my predecessor gave it; and the detailed information it contains cannot but be valuable to the future writer; and it would probably be found impossible to construct the Table hereafter if omitted now.

The total number of Births is 781, or 53 less than 1896, and only 9 more than 1895. The Birth Rate is 34·3, as against 37·0 for 1896, 33·9 for 1895, and 33·2 on an average of the last 10 years. The Northwich Sub-District (37·1) retains the lead which Supplementary Table II. shews to be customary. Weaverham, Middlewich, and Over Sub-Districts follow in the exact order assigned to them by the averages of 10 years past.

The Rates are decidedly high, as compared with other Rural Districts.

**Deaths.**—(Supplementary Table IV.) This is another Table to which the same remarks apply, that have already been made about Table III.

The total number of Deaths is 378, (which includes the necessary corrections as given at the foot of Table A.), and is 30 more than in 1896; and 5 less than in 1895. The Death Rate is 16·6, compared with 15·4 in 1896, and 16·8 in 1895; the average for the last 10 years being 15·4. The Northwich Sub-District is the worst, followed by Weaverham, Over, and Middlewich. The averages in Table II. shew that this deviates from the usual order, which is Weaverham and Over first, followed by Northwich and Middlewich.

*Zymotic Deaths.*—Scarlatina, 9; Diphtheria, 2; Enteric Fever, 2; Measles, 15; Whooping Cough, 14; Diarrhœa, 9; Total 53. Rate 2·3; compared with 1·8 for 1896, and 0·9 for 1895; and 1·0 for the average of the last 10 years. This is a distinctly bad return. The deaths from Measles and Whooping Cough are mainly responsible for it, and they occurred as follows: Measles, Barnton 5, Wincham 1, Winnington 4, Marston 4, Cogshall 1; Whooping Cough, Barnton 2, Hartford 1, Lostock Gralam 2, Wincham 2, Winnington 4, Little Budworth, 1, Moulton 2.

*Puerperal Fever* caused 1 death (F. 21) in Hartford in April.

*Erysipelas*, not usually found as a cause of death, was partly responsible for 1 death (M. 59) at Barnton in July.

*Phthisis* is given as the cause of 11 deaths. Rate, 0·5. But 8 other deaths appear to have been due to various affections believed to be of a Tuberculous nature, and if these were included

(as I consider they ought to be) the total would be 19 and the Rate 0·8. These figures are very satisfactory, being much below the average for the whole country.

*Influenza* is given a special column in Table A. The deaths were 9; of which 7 were recorded in Barnton between February 25 and May 18; at ages 14, 18, 31, 60, 60, 67, 72—the other two were in Weaverham in January (age 3), and in Comberbatch in March (age 2). Six are recorded as complicated with Pneumonia, one with Syncope. Seven were Males, 2 Females.

*Injuries*—8 deaths, as follows: January 3, Barnton, M. under 2 years, burns. July 5, Eddisbury, M. 56, suicide whilst temporarily insane. October 30, Acton, M. 37, drowned in the Weaver. September 25, Lostock Gralam, M. 30, killed by fall of earth. December 28, Marston, M. 24, found drowned in Canal. May 3, Marton, F. 62, trampled by cow. August 2, Wimboldsley, M. 17, drowned whilst bathing. November 10, Marton, F. 20, found drowned. The last named but one belonged to Bedford. The third on the list belonged to Runcorn. 2 deaths occurred outside the District, one F. 2½, burns, Northwich Infirmary, belonging to Lostock Gralam, and one M. 47, machinery accident, same place, belonging to Winnington.

*Inquests*, in addition to the above cases, were held in 7 instances. May 9, Barnton, M. 3 mos., Convulsions from improper feeding; September 28, Barnton, M. 45, Syncope; October 31, Crowton, M. 70, Heart Disease; March 23, Lostock Gralam, M. 39, Apoplexy; July 17, Lostock Gralam, F. 2 mos., Convulsions; March 19, Bostock, M. 14 mos., Teething and Convulsions; April 1, Rudheath, F. 3 hours, shock, cold, and exposure.

*All other Diseases*.—It may be interesting to mention that this column deals with common-place diseases, except the following: 2 cases of Myxædema, (Barnton F. 72 and Lostock Gralam M. 54); 1 Leucocythæmia (Weaverham M. 38); 5 accidents of Parturition (Weaverham F. 23, Barnton F. 33, Lostock Gralam F. 33, F. 32, and F. 44); 4 Cancer (Lostock Gralam F. 34, Moulton M. 77, Marton M. 72, and Little Budworth F. 60); 1 Rupture of Aneurysm (Little Budworth M. 81); and 1 Croup (Comberbatch M. 3 mos.).

*Infantile Deaths*.—Total 114. Proportion to 1,000 Births, 146. This is better than many Districts, but it is still far too high. The deaths under 1 year are classified as follows:



SUB-DISTRICT.	Prematurity, Debility, and Malformation.	Convulsions.	Measles, Whooping Cough, and Diarrhœa.	Bronchitis and Pneumonia.	Miscellaneous.	Total.
Weaverham ...	4	6	4	8	7	29
Northwich ...	17	8	17	8	5	55
Over ...	5	1	2	5	2	15
Middlewich ...	6	3	1	4	1	15
Total ...	32	18	24	25	15	114

The whole of the deaths in the 3rd and 4th columns, and probably many of those in the 2nd and 5th columns, could have been avoided. 60 to 70 deaths took place through the ignorance or carelessness of the parents of the unfortunate infants. The remedy is educational and social; a Sanitary Authority can point it out, but cannot enforce it.

**Mortality at Barnton.**—In his Annual Report for 1889, Dr. Fox drew attention to the exceptional mortality in this Township, though the year is otherwise described as being “almost a blank as regards the presence or spread of all the more serious Zymotic Diseases.” During 1897 my attention could not help but be frequently attracted to the unenviable prominence of Barnton in the weekly Returns. I have, therefore, thought it worth while to take the trouble to work out the following calculations :

Number of Deaths in Barnton, 64. Death Rate, 23·9. Death Rate of whole of remainder of Rural District, 15·6. Zymotic Death Rate of Barnton, 4·4. Zymotic Death Rate of whole of remainder of Rural District, 1·9. The deaths include Measles 5, Whooping Cough 2, Diarrhœa 1, Influenza 7, Scarlatina 1, Diphtheria 1, Enteric Fever 1. 17 deaths were Senile, 14 Infantile, or 26 and 22 per cent respectively of all deaths. Why Barnton should so distinctly hold this evil pre-eminence is not clear. There is a good public water supply; and there are public sewers which, if not perfect, are reported to me to be efficient. The problem must receive further attention in future years.

**Water Analysis.**—These have been undertaken for the Council by the Medical Officer of Health as follows :

DATE, 1897.	TOWNSHIP.	RESULT.
Jan. 2	Byley ...	Good.
Jan. 2	Byley ...	Fair.
Mar. 4	Winnington ...	Very Bad.
Aug. 31	Little Budworth ...	Doubtful.
Aug. 31	Little Budworth ...	Bad.
Sep. 1	Little Budworth ...	Very Bad.
Sep. 1	Little Budworth ...	Doubtful.
Sep. 1	Little Budworth ...	Bad.
Oct. 13	Comberbatch ...	Bad.
Oct. 28	Moulton ...	Very Good.
Oct. 28	Marston ..	Very Good.
Nov. 11	Sproston ...	Bad.
Nov. 11	Sproston ...	Doubtful.
Nov. 11	Sproston ...	Bad.
Nov. 11	Sproston ...	Doubtful.
Nov. 21	Little Budworth ...	Doubtful.
Nov. 21	Little Budworth ...	Passable.
Nov. 21	Little Budworth ...	Doubtful.
Nov. 21	Little Budworth ...	Passable.
Nov. 21	Little Budworth ...	Bad.
Dec. 2	Hartford ...	Very Good.
Dec. 3	Weaverham ...	Somewhat Doubtful.
Dec. 3	Barnton ...	Very Good.
Dec. 3	Barnton ...	Somewhat Doubtful.

The most interesting case is that of Little Budworth. Five samples from shallow wells were examined and condemned in August and September. The Council intended to take steps to enforce a better supply; and had the same wells examined again in November. The results now came out so much more favourably that proceedings had to be suspended. I believe the explanation to be that in November, for some weeks prior to the examination, there had been an unusual absence of rain. Surface pollution had therefore diminished. The Council has ordered a further examination, and the result will be awaited with much interest.

**Sewage Outfalls.**—These were inspected by the County Medical Officer in 1896, and reported on to the Council by the Medical Officer of Health on November 13, 1896. It was not however till September, 1897, that the County Medical Officer presented his report to the County Council, which subsequently communicated it to the District Council, which in turn considered it on November 26th, but did not take any action upon it. The

County Medical Officer considers that at Lostock, Davenham, and Moulton, the existing Sewage Works may be made satisfactory if careful supervision be exercised. Hartford is considered good. No recommendation is made as to Wincham and Marston. But with regard to Weaverham, Barnton, and Winnington, he considers that further works are necessary, to prevent pollution of the river Weaver.

**Sewers.**—There are two places where new Sewers are desirable; one at Acton and one in Wincham. The number of houses to be dealt with in each case is not large, and the Council has preferred to try first to remedy existing nuisances by calling upon owners to make better provision, each for his own drainage. I am afraid the benefit will be temporary rather than permanent.

**Dairies and Cowsheds Order, 1885.**—This has never been put into operation in this District. On September 3rd the Council sanctioned the issue of a Notice of the necessity of Registration, and in reply 69 names were added to the Register. But no steps have been taken to enforce Registration on defaulters. On November 12th I reported a typical case as a test case, where in a building structurally sound there was no light, no ventilation, no drainage, and cubic space per head of 380 cubic feet; with accommodation (of this kind) for about 37 head of cattle. The Council by formal resolution declined to take any action, thus entirely paralysing the Sanitary Department in this most important matter.

**Factory and Workshop Act, 1891.**—Nothing has been done in this direction, there being no Officer with time to devote to it.

**District Inspection.**—This is a difficult and laborious matter, owing to the size of the District and the frequent absence of convenient means of communication. I have kept the more accessible parts well under general observation, and have visited occasionally as many of the outlying corners as possible. A thorough systematic and detailed examination has been made of the Townships of Little Budworth, Delamere, Eddisbury, Oakmere, and Cuddington. This will be continued, as opportunity offers, until every Township has been specially visited.

**T. W. H. GARSTANG,**

*M.R.C.S., D.P.H.*

*January 21st, 1898.*

## INSPECTOR'S REPORT.

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The work of my Department in 1897 has required the uninterrupted attention of myself and my assistant, and is the second year in succession in which a holiday has been out of the question.

Every Notified case of Infectious Disease has been visited, disinfectants supplied, and the house disinfected.

Notices have been served to abate nuisances at 119 houses, and 22 summonses ordered to enforce them.

2,292 houses in the villages are now scavenged weekly on the Pail System by Contractors, and each of these houses is drained to a Main Sewer and has an excellent and constant water supply.

The works of Water Supply in 23 Townships have been maintained in good working order; and have been extended in the Townships of Lostock Gralam, Wincham, Marston, and Delamcre. In each case the cost has been paid by the owners of the property supplied. Plans for increased Reservoir space and Pumping power at the Forest Water-works are now before the Local Government Board. Works are also in the earlier stages of preparation for Winnington and Wimboldsley; and an effort has been made to secure a water-supply to houses in Marton and Sproston from the mains of the Winsford and Middlewich Urban Districts respectively.

Sewerage Works in 11 Townships have been maintained in working order; and have been extended in Barnton and Leftwich.

Plans have been approved for 85 new houses and 1 school, bringing the number of houses in the District to 4,793.

The powers of the Council under the Housing of the Working Classes Act have been brought into operation in the case of 2 houses in Little Budworth, with successful results.

69 Farms have been Registered for the Sale of Milk, but in the work of Registration and other work under the Dairies Order there is still much to be done.

There are 23 Registered and Licensed Slaughter Houses, and these have been kept under careful supervision.

77 Canal Boats have been examined, and 28 infringements of the Regulations noted, all which have been dealt with in the prescribed manner.

The Office-work in connection with the above duties has involved the writing of 1,434 letters; and all book-keeping and Reports are up to date; and I am not aware of any duty left undone.

H. J. BENNETT,

*December 31st, 1897.*

*Inspector.*



[A] Table of **DEATHS** during the Year 1897, in the Northwich Rural

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities. (Columns for Population and Births are in Table B.) Registration Sub-Districts of (a)	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.							(i)
	At all ages. (b)	Under 1 year. (c)	1 and under 5. (d)	5 and under 15. (e)	15 and under 25. (f)	25 and under 65. (g)	65 and upwards. (h)	
Weaverham ... ..	140	27	20	7	8	24	54	{ Under 5 ... 5 upwards ...
Northwich ... ..	150	55	36	2	6	32	19	{ Under 5 ... 5 upwards ...
Over ... ..	45	14	2	1	5	8	15	{ Under 5 ... 5 upwards ...
Middlewich ... ..	35	15	5	...	1	5	9	{ Under 5 ... 5 upwards ...
TOTALS ... ..	370	111	63	10	20	69	97	{ Under 5 ... 5 upwards ...

The subjoined numbers have also to be taken into

Deaths occurring outside the district among persons belonging thereto.	10	3	1	1	1	2	2	{ Under 5 ... 5 upwards. ...
Deaths occurring within the district among persons not belonging thereto.	2	...	...	...	1	1	...	{ Under 5 ... 5 upwards. ...

\* The heading of column 19 is left blank for the insertion of Influenza,

[B] Table of **POPULATION, BIRTHS, AND OF NEW CASES OF**  
of Health, during the Year 1897, in the Northwich Rural District;

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as separate localities. Registration Sub-Districts of (a)	POPULATION AT ALL AGES.			Aged under 5 or over 5. (e)	NEW CASES OF KNOWLEDGE			
	Last Census. (b)	Estimated to middle of 1897. (c)	Registered Births. (d)		Small-pox. 1	Scarlatina. 2	Diphtheria. 3	Membranous Group. 4
Weaverham ... ..	8058	8671	295	{ Under 5. 5 upwds. ...	..	11	1	1
Northwich (H.) ... ..	7069	8174	303	{ Under 5. 5 upwds. ...	...	22	...	...
Over ... ..	3083	3113	92	{ Under 5. 5 upwds. ...	...	23	1	...
Middlewich ... ..	2699	2810	91	{ Under 5. 5 upwds. ...	...	32	2	...
TOTALS ... ..	20909	22768	781	{ Under 5. 5 upwds. ...	...	1	...	...

State here whether "Notification of Infectious Disease" is compulsory in the District,--Yes.



*District, classified according to DISEASES, AGES, and LOCALITIES.*

MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																					
Small-pox. 1	Scarlatina. 2	Diphtheria. 3	Membranous Croup. 4	FEVERS.					Cholera. 10	Erysipelas. 11	Measles. 12	Whooping Cough. 13	Diarrhoea and Dysentery. 14	Rheumatic Fever. 15	Phthisis. 16	Bronchitis, Pneu- monia, & Pleurisy. 17	Heart Disease. 18	Influenza. 19	Injuries. 20	All Other Diseases. 21	Total. 22
				Typhus. 5	Enteric or Typhoid. 6	Continued. 7	Relapsing. 8	Puerperal. 9													
...	1	...	1	...	...	...	...	...	...	...	4	3	...	...	...	12	...	1	1	24	47
...	...	...	...	...	2	...	...	1	...	1	1	...	1	...	2	21	15	7	2	40	93
...	6	1	...	...	...	...	...	...	...	...	9	8	7	...	2	16	...	1	...	41	91
...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	6	4	7	...	2	38	59
...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	4	...	...	...	9	16
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	7	...	3	14	29
...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	4	...	...	...	14	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...	...	11	15
...	8	1	1	...	...	...	...	...	...	...	13	14	8	...	2	36	...	2	1	88	174
...	1	...	...	...	2	...	...	1	...	1	2	...	1	...	9	31	31	7	7	103	196

account in judging of the above records of mortality.

...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	2	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	1	2	6	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	2

or any other disease which it may be thought desirable to record.

**INFECTIOUS SICKNESS**, coming to the knowledge of the Medical Officer  
classified according to DISEASES, AGES, and LOCALITIES.

SICKNESS IN EACH LOCALITY COMING TO THE OF THE MEDICAL OFFICER OF HEALTH.										NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.
FEVERS.					Cholera.  10	Erysipelas.  11	12	13		
Typhus. 5	Enteric or Typhoid. 6	Continued 7	Relapsing 8	Puerperal. 9						
...	...	...	...	...	...	...	...	...	Scarlatina, Northwich (H.), 4; Middlewich, 1; Total, 5.	
...	4	...	...	2	...	3	...	...		
...	...	...	...	...	...	...	...	...		
...	5	...	...	1	...	2	...	...		
...	...	...	...	...	...	...	...	...		
...	1	...	...	...	...	4	...	...	Enteric or Typhoid Fevers, Northwich (H) 1.	
...	...	...	...	...	...	...	...	...		
...	2	...	...	2	...	2	...	...		
...	...	...	...	...	...	...	...	...		
...	...	...	...	...	...	...	...	...		
...	12	...	...	5	...	11	...	...		

Scarlatina, Northwich (H.), 4; Middlewich, 1; Total, 5.

Enteric or Typhoid Fevers, Northwich (H) 1.

Since when?—1st January, 1890. (H) Small Wooden Building built for Small-pox only.

## SUPPLEMENTARY TABLE I.

Cases of Infectious Diseases Notified, 1897, arranged according to Localities.

	Scarlet Fever.	Diphtheria and Membranous Croup.	Enteric Fever.	Puerperal Fever.	Erysipelas.	Total.		Scarlet Fever.	Diphtheria and Membranous Croup.	Enteric Fever.	Puerperal Fever.	Erysipelas.	
Acton ...	3	...	...	...	...	3	Clive ...	...	...	...	...	...	...
Barnton ...	21	2	2	...	1	26	Darnhall ...	1	...	...	...	1	2
Crowton ...	1	...	1	...	...	2	Eaton ...	...	...	...	...	...	...
Cuddington ...	1	...	...	...	...	1	Little Budworth ...	...	...	...	...	...	...
Delamere ...	...	...	...	...	...	...	Marton ...	...	...	...	...	...	...
Eddisbury ...	...	...	...	...	...	...	Moulton ...	...	...	1	...	3	4
Hartford ...	...	...	...	1	...	1	Wimboldsley ...	...	...	...	...	...	...
Little Leigh ...	5	...	...	...	...	5							
Oakmere ...	...	...	...	...	...	...							
Weaverham ...	1	...	1	1	2	5	OVER ...	1	...	1	...	4	6
WEAVERHAM...	32	2	4	2	3	43	Bostock ...	...	...	...	...	...	...
							Byley ...	...	...	...	...	...	...
Allostock ...	1	...	...	...	...	1	Davenham ...	19	1	2	2	1	25
Anderton ...	2	1	...	...	...	3	Kinderton ...	5	...	...	...	...	5
Cogshall ...	...	...	...	...	...	...	Lach Dennis ...	...	...	...	...	...	...
Comberbatch ...	...	...	1	...	...	1	Rudheath ...	15	...	...	...	1	16
Leftwich ...	9	...	...	...	...	9	Sproston ...	...	...	...	...	...	...
Lostock Gralam ...	7	1	...	...	1	9	Stanthorne ...	...	...	...	...	...	...
Marbury ...	...	...	...	...	...	...	Whatecroft ...	...	...	...	...	...	...
Marston ...	10	...	2	1	1	14	MIDDLEWICH..	39	1	2	2	2	46
Nether Peover ...	...	...	...	...	...	...	Weaverham ...	32	2	4	2	3	43
Wincham ...	9	...	1	...	...	10	Northwich ...	56	3	5	1	2	67
Winnington ...	18	1	1	...	...	20	Over ...	1	...	1	...	4	6
NORTHWICH...	56	3	5	1	2	67	Middlewich ...	39	1	2	2	2	46
							Grand Total ...	128	6	12	5	11	162

## SUPPLEMENTARY TABLE II.

Shewing Births, Birth Rate, Deaths, and General and Zymotic Death Rates, and compared with average of last 10 years; and Deaths in Old Age and Infancy, and percentages of these to Total Deaths; for the Year 1897.

Registration Sub-District of	TOTAL.			BIRTH RATE.		DEATH RATE.				DEATHS.		PERCENTAGE TO TOTAL DEATHS OF DEATHS.	
	Births.	Deaths	Zymotic Deaths.	Average.	1897.	General.		Zymotic.		At 65 Years and upwards.	Under One Year.	At 65 Years and upwards.	Under One Year.
						Average.	1897.	Average.	1897.				
Weaverham.	295	142	13	32·5	34·0	16·0	16·4	1·1	1·7	54	28	38	20
Northwich ...	303	156	33	36·5	37·1	15·9	19·1	1·1	4·0	20	55	13	34
Over ...	92	45	3	30·6	29·5	16·0	14·4	0·7	0·9	15	15	33	33
Middlewich..	91	35	2	32·5	32·4	13·8	12·4	0·9	0·7	9	15	23	43
Total ...	781	378	51	33·2	34·3	15·4	16·6	1·0	2·3	98	113	26	30

## SUPPLEMENTARY TABLE III.—BIRTHS.

	1st Quarter.				2nd Quarter.				3rd Quarter.				4th Quarter.				TOTAL.			
	M.	F.	Total.	Rate.	M.	F.	Total.	Rate.	M.	F.	Total.	Rate.	M.	F.	Total.	Rate.	M.	F.	Total.	Rate.
Weaverham	47	44	91	42·6	34	27	61	28·2	33	32	65	29·7	41	37	78	35·7	155	140	295	34·0
Northwich..	53	36	89	44·2	35	29	64	31·4	44	34	78	37·9	33	39	72	35·0	165	138	303	37·1
Over ..	8	8	16	20·9	10	17	27	34·8	12	12	24	30·6	17	8	25	31·9	47	45	92	29·5
Middlewich	12	6	18	26·0	15	10	25	35·7	8	16	24	33·9	13	11	24	33·9	48	43	91	32·4
Total	120	94	214	38·1	94	83	177	31·2	97	94	191	33·3	104	95	199	34·7	415	366	781	34·3

## SUPPLEMENTARY TABLE IV.—DEATHS.

	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.
Weaverham	53	23·7	38	17·6	23	10·5	28	12·8	142	16·4
Northwich...	48	23·8	42	20·6	39	19·2	27	13·1	156	19·1
Over ...	22	28·7	13	16·7	4	5·1	6	7·6	45	14·4
Middlewich .	14	20·2	11	15·7	2	2·8	8	11·3	35	12·4
	137	24·4	104	18·3	68	11·8	69	12·0	378	16·6

## SUPPLEMENTARY TABLE V.

Shewing the position of the Sub-Districts as compared with 29 other Rural Districts and Sub-Districts in Cheshire in 1896.

	Birth Rate.	Place in List.	Death Rate.	Place in List.	Zymotic Death Rate.	Place in List.	Infantile Mortality Figure.	Place in List.
Best of 33 ...	44·8		10·8		0·0		70	
Worst of 33.	18·5		20·4		3·5		168	
Weaverham	34·9	3	16·2	26	2·9	32	147	32
Northwich...	44·8	1	15·2	20	1·7	25	104	17
Over ...	28·8	7	15·2	20	0·0	1	168	33
Middlewich	30·0	6	14·1	14	1·0	16	96	9

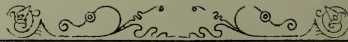


## SUPPLEMENTARY TABLE VI.

Shewing Population, Estimated, 1897; Total Deaths, Deaths from Special Diseases, and at Special Ages, in entire Sanitary District, the Registration Sub-Districts, and the individual Townships, in 1897.

POPULATION ESTIMATED 1897.	REGISTRATION DISTRICTS AND TOWNSHIPS.	TOTAL DEATHS.	DEATHS FROM SPECIAL DISEASES.								TWO GROUPS OF AGES.	
			Scarlet Fever.	Diphtheria.	Enteric Fever.	Measles.	Whooping Cough.	Diarrhoea.	Total Zymotic.	Phthisis.	At 65 Years & Upwards.	Under 1 Year.
555	Acton ...	7	...	...	...	...	...	...	...	...	2	2
2715	Barnston ...	64	1	1	1	5	2	1	11	...	17	14
550	Crowton ...	12	...	...	1	...	...	...	1	1	5	1
530	Cuddington ...	5	...	...	...	...	...	...	...	...	3	2
532	Delamere ...	7	...	...	...	...	...	...	...	...	4	1
286	Eddisbury ...	2	...	...	...	...	...	...	...	...	1	...
925	Hartford ...	11	...	...	...	...	1	...	1	...	3	2
410	Little Leigh ...	5	...	...	...	...	...	...	...	...	4	1
398	Oakmere ...	5	...	...	...	...	...	...	...	...	3	...
1770	Weaverham ...	25	...	...	...	...	...	...	...	1	13	5
8671	WEAVERHAM R.S.D.	143	1	1	2	5	3	1	13	2	55	28
480	Allostock ...	5	...	...	...	...	...	...	...	...	3	1
357	Anderton ...	6	1	...	...	...	...	...	1	...	...	1
86	Cogshall ...	3	...	...	...	1	...	...	1	...	1	...
400	Comberbatch ...	8	...	...	...	...	...	...	...	...	1	2
778	Leftwich ...	5	1	...	...	...	...	...	1	1	2	1
1940	Lostock Gralam ...	46	...	...	...	...	2	3	5	4	1	20
60	Marbury ...	2	1	...	...	...	...	...	1	...	...	1
925	Marston ...	24	...	1	...	4	...	...	5	3	7	5
220	Nether Peover ...	1	...	...	...	...	...	...	...	...	...	1
1173	Wincham ...	20	...	...	...	1	2	2	5	1	3	9
1755	Winnington ...	35	4	...	...	4	4	2	14	1	2	16
8174	NORTHWICH R.S.D.	155	7	1	...	10	8	7	33	10	20	57
173	Clive ...	3	...	...	...	...	...	...	...	...	...	1
337	Darnhall ...	2	...	...	...	...	...	...	...	...	...	1
24	Eaton ...	...	...	...	...	...	...	...	...	...	...	...
610	Little Budworth ...	8	...	...	...	...	1	...	1	...	3	3
650	Marton ...	12	...	...	...	...	...	...	...	...	6	1
1100	Moulton ...	20	...	...	...	...	2	...	2	...	6	8
219	Wimboldsley ...	...	...	...	...	...	...	...	...	...	...	...
3133	OVER R.S.D.	45	...	...	...	...	3	...	3	...	15	14
223	Bostock ...	1	...	...	...	...	...	...	...	...	...	...
200	Byley ...	5	...	...	...	...	...	...	...	...	1	3
670	Davenham ...	7	...	...	...	...	...	...	...	...	3	2
250	Kinderton ...	4	...	...	...	...	...	...	...	...	2	1
180	Lach Dennis ...	3	...	...	...	...	...	1	1	...	...	2
750	Rudheath ...	14	1	...	...	...	...	...	1	1	2	7
193	Sproston ...	...	...	...	...	...	...	...	...	...	...	...
204	Stanthorne ...	1	...	...	...	...	...	...	...	...	1	...
140	Whatercroft ...	...	...	...	...	...	...	...	...	...	...	...
2810	MIDDLEWICH R.S.D.	35	1	...	...	...	...	1	2	1	9	15
22768	{ ENTIRE SANITARY DISTRICT. }	378	9	2	2	15	14	9	51	13	99	114





CONGLETON :

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